### Sustainability Report 2020 IPTO



Sustainability Report 2020 **IPTO** 





### Contents

Message from the Chairman and CEO

#### ΙΡΤΟ

#### Sustainable Our role as 12 HETS Operator Vision and values for sustainable 14 development 15 The history of IPTO Shareholder 15 structure Subsidiaries 17 Strategic priorities 18 and sustainable development goals

#### Contribution to sustainable development

Sustainable development strategy	26
Material issues for sustainable development	31
Consultation with our stakeholders	33
Operating with respect to local communities and the environment	37
Supporting organisations and institutions	40
Our "social product"	42
Responding to climate change	44
Sustainable procurement	45

#### Energy network and infrastructure

Development of the energy transmission system50Energy transition58Target Model's operation62Procedure for determining the energy mix64Asset management66Digital transformation68Research & Development and innovative energy technologies74	Network adequacy, security, stability & reliability	48
Energy transition58Target Model's operation62Procedure for determining the energy mix64Asset management66Digital transformation68Research & Development and innovative energy 	Development of the energy transmission system	50
Target Model's operation62Procedure for determining the energy mix64Asset management66Digital transformation68Research & Development and innovative energy 	Energy transition	58
Procedure for determining the energy mix64Asset management66Digital transformation68Research & Development and innovative energy technologies74	Target Model's operation	62
Asset management66Digital68transformation74Research &74Development and innovative energy technologies	Procedure for determining the energy mix	64
Digital68transformation74Research &74Development and innovative energy technologies	Asset management	66
Research & 74 Development and innovative energy technologies	Digital transformation	68
	Research & Development and innovative energy technologies	74

47

Employm

Occupatio and Safet

Training a developm

Equal opp and perfo evaluation

95

### Corporate

11

### governance

Governance Structure

22

21



06

#### Caring for the environment

79

About
the
Report

Energy consumption managememt	80	Report methodology	110
Waste management & circular economy	84	Table of GRI standards	112
Biodiversity conservation and environmental restoration	85	Table of Sustainability Accounting Standards Board (SASB)	121
Environmental compliance	92	External assurance	122



#### Human resources

ent	96
onal Health :y	97
and nent	103
portunities prmance n	106

### Message from the Chairman and **Chief Executive Officer**

#### Dear shareholders,

The second Sustainability Report comes in a year full of achievements for IPTO Group but also of important challenges, in the midst of a pandemic and climate crisis.

A key priority for the Operator is to shield the health and safety of its employees and associates. For this reason, all the provided health and safety protocols came into force based on the instructions of the competent national bodies, from very first moment of the Covid-19 pandemic. Apart from its own people, IPTO stands consistently by the side of the society, supporting the public healthcare system with equipment donations amounting to 863 thousand euros, which were distributed during 2020 to hospitals in Attica and the rest to the mainland and the islands.

Despite the adverse conditions created by the health crisis, our immediate and effective response to the new circumstances became the starting point for accelerating modernization of procedures and digital transformation of the Company. The transformation into a sustainable, digital Transmission System Operator (Digital TSO) is a strategic goal of IPTO Group. We have taken significant steps towards this goal: digitization of the Energy Control Centers, creation of a Network Operation and Cybersecurity Control Center and installation of state-of-the-art software systems.

Last year, the long-term teleworking of the staff made necessary to create Internal Communication channels for continuous updates on developments regarding the pandemic and the Company's policy against it. In this context, «IPTOnet», the intranet of the Group, was introduced through which employees are informed on a daily basis about corporate news as well as news from around the world on Energy, Environment and Sustainable Development.

The Group is also a major enabler of the digital transformation of the whole country. Through its subsidiary, Grid Telecom, which operates in the field of telecommunications, the Operator actively, contributes to the upgrading of the broadband infrastructure through an extensive fiber optic network that in 2020 reached 3,760km and is constantly developing along with the electricalinterconnection projects.

Another important achievement of the past year was the launch of the Target Model, the single wholesale market model, applicable in all countries of the European Union. The Model's implementation was a very demanding and multi-component process, for which we took a series of intensive and coordinated actions. The transition into the Target Model strengthens the country's security of supply, leads to fairer electricity prices for consumers and contributes to the more efficient integration of RES in the energy mix.

In the midst of increasing challenges, the primary goal of IPTO Group is to ensure business continuity. Indeed, the 5 billion-euro investment plan until the end of the decade is being implemented according to schedule. In 2020, significant electrical interconnections projects were completed. At the beginning of the year, the new submarine cable connecting Andros with Tinos was installed. In autumn, Naxos was interconnected with the mainland grid through Paros and the second Lavrio-Syros submarine interconnection was electrified. Within the same year, the first circuit of the Crete-Peloponnese interconnection was successfully tested. The project's construction was completed in May 2021 and put into commercial operation two months later, transmitting the first electrical loads from the mainland grid to Crete.

2020 was a milestone year also for the interconnection of Crete with Attica, the greatest project in the history of the Hellenic Electricity

Transmission System. The contracts were signed in June and the project, amounting to 1 billion euros, is now in the process of implementation by the subsidiary «Ariadne Interconnection». Crete-Attica interconnection comprises significant technical challenges on a global level and is expected to lead to multiple economic, environmental and social benefits both for the residents of Crete and the consumers of the whole country.

Despite the adversities, IPTO Group strengthened its financial position, achieving strong results for 2020. The total consolidated revenues amounted to 287 million euros, increased by 14.8% compared to the previous year, while the net profits amounted to 85 million euros. At the same time, with the rapid expansion of CapEx, which recorded an annual change of 81%, the Group achieved significant savings in financial and operational terms by reducing the borrowing cost and by streamlining its operating expenses.

With the implementation of the island interconnections, IPTO plays a key role in the achievement of the national strategy for the energy transition, contributing substantially to the establishment of a low carbon economy.

At the same time, the climate crisis, reflected in the increased intensity and frequency of natural disasters, puts the durability of the Transmission System to the test. Resilience to the unprecedented challenges of climate deregulation is a major concern for the operators of critical infrastructure internationally. For this reason, IPTO Group proceeds to the strengthening and acceleration of the Fixed Assets Renewal program, with the aim of modernizing and upgrading critical components of the electrical system within the coming years.

Our vision is to ensure the uninterrupted power supply of the country's consumers on two pillars:

the development and -at the same time- the shielding of the electrical system. In all aspects of our activity, we act responsibly and with respect for the people, the environment and the local communities in the areas where we operate, creating value for shareholders, consumers and society at large.

MANOS MANOUSAKIS Chairman and Chief Executive Officer



### Map of the Hellenic Electricity **Transmission System**



#### **Transmission System**

#### Major projects to be constructed by 2024

Interconnection of Crete Interconnection of Northern Cyclades Interconnection of Southern and Western Cyclades Second interconnection between Greece and Bulgaria 400kv System Expansion in the Peloponnese Reconstruction of Koumoundourou HVC

#### Major projects planned by 2030

Interconnection of the Dodecanese Interconnection of the northeastern Aegean New 400kV Filippi-Nea Santa station Argyroupoli HVC







IPTO aims to provide the country with reliable, efficient and green electricity, promoting the development of free competition in the Greek electricity market.





### Our role as **HETS Operator**

IPTO S.A. (Independent Power Transmission Operator) is the Operator of the Hellenic Electricity Transmission System (HETS).

The purpose of the Company is the operation, control, maintenance and development of the HETS, in order to ensure the adequate, secure, efficient and reliable supply of electricity to the country, including the operation of the Balancing Market and cross-border trade in accordance with the principles of transparency, equality and free competition.

Given the Company's pivotal role, all necessary measures have been taken and all required procedures have been set to ensure its independence, strict adherence to the "equal treatment" principle for all System Users and Electricity Market Participants, transparency in its operation and adherence to the principle of confidentiality regarding the information handled by IPTO.

At the end of 2020, the Hellenic Electricity Transmission System covered 12.393 km of transmission lines and 543 substations with a total installed capacity of 21,952MVA:



2,792km of 400kV lines (overhead and underground)

107km of 400kV D.C. lines and cables (overhead)



9,380km

of 150kV lines

and cables



114km of 66kV lines and cables (overhead, submarine (overhead, submarine and underground) and underground)

#### The Hellenic Electricity Transmission System

The purpose of the Hellenic Electricity Transmission System (HETS) is the smooth, safe and uninterrupted transmission of electricity from power plants (Conventional or RES) to consumption points (Urban Centres, Industries, etc.).

As large-scale power stations are usually located far from urban centres and in order for electricity to be transmitted in the best and most efficient way, the voltage is raised in the substations of the power plants to 400kV and 150kV levels, so that the energy is transmitted by high and ultra-high voltage transmission lines either:

- to the high-voltage substations of selected Customers, or
- to the substations connected to the Hellenic Electricity Distribution Network (HEDNO) where the voltage is reduced to the average level (20kV). Distribution lines start from these substations, ending at the distribution substations where the average voltage is further lowered to 220/380V, which is used by most consumers.

#### The main elements of HETS are:



400kV and 150kV Overhead

transmission lines

The Hellenic System operates in parallel with the interconnected European System under the overall coordination of ENTSO-E. The parallel operation of the Hellenic and European Systems is achieved through interconnection transmission lines (mainly 400 kV) with the Systems of Albania, Bulgaria, Northern Macedonia and Turkey. In addition, the Hellenic System is connected asynchronously (via a 400 kV DC submarine connection) to Italy.

#### Hellenic Electricity Transmission System Grid Code

IPTO exercises its role as Hellenic Electricity Transmission System Operator, based on the H Electricity Transmission System Grid Code, wh regulates all issues related to the management System.

- In particular, the HETS Grid Code mainly regu the following:
- The technical specifications for the design, operation and maintenance of the System,
- The procedure for the preparation of the Sys maintenance program,
- The terms for applying for access to the Systematic states and the S the required supporting documents, the min technical and functional specifications for ac to the System,
- The obligations for the absorption of electric the HETS in relation to the assurance of capa adequacy in the System and the manner of fulfilling these obligations,
- The conditions and the procedure to be followed by the Transmission System Operator for the conclusion of contracts,





400kV and 150kV Underground and submarine cable lines 150/20kV **Substations** 



400/150kV Ultra High Voltage Centres (HVCs)

Iellenic iich t of the ulates	<ul> <li>The type and minimum content of contracts for connecting power plants to the System and any other relevant issues,</li> </ul>
	• The approval procedure followed by installation license holders for power plants connections to the System, as well as for auditing and approving these projects by the Operator,
	<ul> <li>Accounts that the Operator must keep for charges arising from the management of the HETS,</li> </ul>
stem	<ul> <li>The procedure for the out-of-court settlement of disputes between Users and the HETS Operator,</li> </ul>
tem, nimum ccess city by	• The procedures applied and the transactions carried out by the HETS Operator for the calculation and allocation of long-term and short- term capacity at the bidding zone borders to Participants,
acity	<ul> <li>Any other regulation necessary for the smooth, safe and efficient management of the System.</li> </ul>

### Vision and values of sustainable development



The values that quide our daily steps:



Ensuring the country's continuous and uninterrupted electricity supply, fulfilling all quality, safety and performance criteria, is our foremost objective, which runs through all our activities as the Hellenic Electricity Transmission System's Operator.



#### Transparency

Applying procedures of absolute transparency and providing electricity market agents with the necessary information for promoting healthy competition.



#### Efficiency

Performing our duties as System Operator in the most efficient manner, with optimal utilisation of all available resources. Contributing to the country's development in serving the public interest and creating value training and skills development for all of our stakeholders.



Impartiality

Guaranteeing equal and

non-discriminatory access

to the System for all users.

#### **Sustainability**

Performing our duties according to the principles of sustainable development, under economic, social and environmental terms. Contributing to research and development, professional of our human resources.

The history of IPTO



RAE of IPTO's

governing the

model of the

Independent

Transmission

Electricity

Operator.

2017

Establishment, Listing of IPTO organisation and HOLDING operation of IPTO on the based on Law Athens Stock 4001/2011. Exchange.

Certification by compliance with IPTO S.A. the requirements

IPTO HOLDING holds 51% of the share capital of

Acquisition of a 24% share from State Grid Corporation of China.

**IPTO** participation in the share capital of the Hellenic Energy Exchange (EXE) with a 20% holdina.

2018

Establishment of the special purpose vehicle Ariadne Interconnection.

Shareholder structure

As of the 20th of June 2017, IPTO follows the Ownership Unbundling model, and is fully in line with Directive 2009/72/EC. The Company's registered office is located at 89 Dyrrachiou Street, Athens. The shareholder structure of IPTO is as follows:



IPTO Holding holds 51% of IPTO S.A. and is listed on the Athens Stock Exchange. The goals and strategy of IPTO Holding are the effective and efficient implementation of IPTO's purpose. IPTO S.A. is the sole asset of IPTO Holding and IPTO Holding exercises control over it.

Our vision is to be one of the most efficient electricity transmission operators in Europe, providing added value to all stakeholders in the context of sustainable development, respecting people and the environment, for the benefit of System Users and society as a whole.



Establishment and participation in the share capital of the Regional Control Centre in Thessaloniki. SEleNe CC with a percentage of 25%.

### **Fiber optic** infrastructure map

Completed and under construction optical fibers coupled with HV power lines.



Terrestrial

- Terrestrial under development
- Submarine
- Submarine under development

### **Subsidiaries**

#### Ariadne Interconnection S.P.L.C.

The Interconnection of Crete with Attica is th largest project in the history of the National Transmission System and, by extension, in the history of IPTO. The total budget for this emblematic project amounts to 1 billion euros

In terms of technical specifications, the proje represents a challenge, as very few such projects are carried out worldwide. With the implementation of this project, through Ariad

of fiber optic networks, providing integrated electronic communications services.

#### **GRID TELECOM S.A.**

GRID TELECOM, founded in 2019, is a 100% subsidiary of IPTO. Its aim is to provide telecommunication services in the domestic and international markets by utilising the 3,759km fiber optic network already installed in the Operator's high and ultra-high voltage lines, with the possibility of its further expansion through the overhead and submarine cable transmission lines, covering a total length of 12,000km, throughout the Greek territory.

To a large extent, this fiber optic network offers alternative routes which ensure high availability of services to customers. Initially, GRID-TELECOM services mainly concern the provision of dark fiber to telecommunications providers, as well

#### Apart from the parent company, the IPTO Group includes the affiliated companies "ARIADNE INTERCONNECTION S.P.L.C." and "GRID TELECOM SINGLE MEMBER S.A., which are 100% subsidiaries.

e	Interconnection, IPTO paves the way utilisation of the know-how develope level.	for the future d at business
s.	The headquarters of Ariadne Intercon is located at 89, Dyrrachiou and Kifiss Athens.	nection ou Street,
ect	More information about Ariadne	
Ine	Interconnection S.P.L.C. is provided on the Company's website (www.ariadne-interconnection.gr/en).	

### GRID TELECOM expands the scope of the IPTO Group's activities in the operation, exploitation, management and development

	as to large companies and organisations with requirements for high-speed broadband services
	In 2020, GRID TELECOM signed a 15-year
d	framework contract with WIND, concering the th lease of multiple pairs of fiber optic cables in part of the IPTO network in mainland Greece, covering
:h	a total length of 1,600km

The Company's net income for 2020 amounted to 150,426 euros. The Company's heartquarters are located at 89, Dyrrachiou and Kifissou Street, Athens.

More information about GRID TELECOM S.A. is provided on the Company's website (www.grid-telecom.com).



# Strategic priorities and sustainable development goals

Over time, our mission, in the context of our role as Operator of the Hellenic Electricity Transmission System, focuses on continuous improvement and value creation for all of our stakeholders, thus contributing to the sustainable development of the entire country.

It is in this context that we have defined our strategic priorities for the coming period, which brings us even closer to our vision: a future with secure, fair and affordable zero-carbon energy.

The following strategic priorities confirm in practice the importance of our role as the main actor in implementing the national strategy for the transition to a low-carbon economy and, by extension, our decisive contribution to sustainable development for the country's economy, environment and society.

These strategic priorities are the result of consultation with our stakeholders and contribute significantly to the achievement of some of the United Nations Sustainable Development Goals for our country.



True to its mission, IPTO designs and develops reliable, sustainable and resilient electricity transmission infrastructure, most notably the electrical interconnections between the islands and the mainland System, in order to support economic growth and human well-being, with emphasis on equal access for all.

Accelerating the modernisation of the Electricity Transmission System	In order for the Group t following actions: a) ins vehicles, b) digitisation Systems (GIS) platform
Electricity market development	Given the Company's p reforms in the wholesal
Further development of the fiber optic network	The plan for 2021 includ centres, as well as the p network to be installed
Digitalisation of the Group's operations	The implementation of will allow the Company important tool for Grou
Further development of international interconnections	The development of int of the System and the o context, IPTO cooperat Macedonia and Turkey) examines opportunities states in the SE Mediter
Electricity storage	The new Ten-Year Deve installation in Thebes a IPTO with significant ex acheiving the objective
Increased penetration of renewable energy sources	Both the National Energy acceleration of large-so of the Aegean islands a Peloponnese is the bas the domestic energy sy
Development of offshore wind parks	The extension of the Int development of offshor for developing of strate for a transparent and ro development in the ma
Developing a Green Strategy	The strategy of the nex the ways in which IPTO
Calculation and reduction	of carbon footprint and
Exploring opportunities fo	r listing the Company to
Training personel on susta	inable development issu
Optimal waste manageme	nt from IPTO operations
Protection of employees h accordance with internatio	ealth and development onal standards and certi
Introduction of social and	environmental criteria i

to improve the security and reliability of the System, it plans the spection of transmission lines by manned and unmanned aerial n of substations and c) upgrading of the Geographic Information with new applications.

pivotal role in the new dynamic Target Model market, a series of ale electricity market are planned in 2021.

des the construction of telecommunication hubs in IPTO's high voltage provision of capacity services through a state-of-the-art DWDM d by IPTO.

a new integrated Operational Information System (ERP/EAM/WFM) y to facilitate information flows at all levels. This system will become an up modernisation.

Atternational interconnections contributes substantially to the stability convergence of prices between different European regions. In this ates with the neighbouring Operators (Bulgaria, Italy, Albania, North attes with the neighbouring interconnections. At the same time, IPTO to strengthen transnational interconnections. At the same time, IPTO as for developing new international connections with neighbouring erranean region (Cyprus, Egypt, Libya).

elopment Plan includes pilot projects regarding battery systems and Naxos, set to be completed in 2022. These projects will provide xperience in the management of battery systems, necessary for es of the National Energy and Climate Plan (NECP) for the year 2030.

rgy and Climate Plan and the Long-Term Energy Plan for 2050 call for the scale integration of new renewable energy plants. The interconnection and the expansion of the 400kV Transmission System to the se for the integration of up to 3GW new renewable energy plants, into system.

nterconnected Transmission System to the islands enables the ore wind parks. Consequently, there is a need for integrated planning tegic sea infrastructure. IPTO aims to contribute to the public debate robust regulatory framework, by utilising its experience from RES ainland system.

xt four years will include action for combating climate change as well as D will contribute to the reduction of GHGs.

#### energy performance improvement of the two headquarters

o an international sustainability stock exchange index

Jes

of an Occupational Health and Safety Management System in ification by an independent body

in the procurement procedures ("green procurement")



# Corporate governance

In order to achieve long-term and sustainable development for IPTO and its affiliated companies, as well as to maximise the benefit for society, we adhere to high standards of corporate governance.





### **Governance Structure**

#### **Board of Directors**

The Company's Board of Directors consists of nine members, elected by the General Meeting of

Shareholders. A member of the Board of Directors represents the employees of the Company. The composition of the Board of Directors on 31/12/2020 is presented below.

#### **Board of Directors**

Name	Position Role		Gender
Manousakis Manousos	Chairman & CEO	Executive	Male
Dong Chen	Deputy CEO	Executive	Female
Margaris Ioannis	Vice-Chairman – General Manager	Executive	Male
Hong Li	Independent Member	Non-executive	Male
Yunpeng He	Independent Member	Non-executive	Male
Roussopoulos Iason	Member – Deputy General Manager	Executive	Male
Nikolopoulos Fotios	Member – Employee Representative	Non-executive	Male
Aspras Antonis	Independent Member	Non-executive	Male
Ignatiadis Stavros	Member	Non-executive	Male

#### Distribution of BoD members by age

Age group	<30	30-50	50>	Total
Number of BoD members per age group	0	6	3	9

The main role of the Board of Directors is to define the Company's strategy and development policy, as well as to supervise and control the management of its assets, especially in terms of the maintenance and management of the Transmission System and the preparation of the Ten-Year Development Plan

of the Hellenic Electricity Transmission System. The Company's CEO also serves as Chairman of the Board of Directors. In this way it is possible to take decisions more directly and to effectively coordinate the work of the General Divisions.

### Given its role as TSO, the appropriate management of sustainable development issues is important for IPTO

#### **Board Committees**

The Company's Board of Directors is supported within the framework of its responsibilities by the following three advisory Committees:

- Financial Audit Committee
- Strategic Planning Committee
- Remuneration and Appointments Committee

#### Financial Audit Committee

The Financial Audit Committee consists of four members and its main responsibilities are the following:

- supervision of relevant information's collection and the preparation of the Company's financial statements,
- monitoring the accounting practices and rules applied by the company,
- monitoring the Company's business plan together with the Strategic Planning Committee,
- briefing from the external or any internal auditors of the Company; and
- submitting proposals to the Board of Directors regarding the appointment, renewal of office term and remuneration of the Company's external auditors.

#### Strategic Planning Committee

The Strategic Planning Committee consists of four members. Its responsibilities, among othe include the monitoring of the Company's busi plan together with the Financial Audit Commit and the submission of strategic planning prop to the Board of Directors.

#### Remuneration and Appointments Committee

The Remuneration and Appointments Commi consists of four members. Its responsibilities include, inter alia, monitoring the appointmer employees by the Company and determining relevant remuneration.

#### Managing sustainable development issues

# Given its role as TSO, the appropriate management of sustainable development issues is important for IPTO. For this reason, although there is no separate committee at Board level, an appropriate governance structure is applied through which such issues are managed.

More specifically, the heads of the General Divisions report to the Chairman and CEO, who approves the actions and programs for the management of various issues related to sustainable development. The Chairman and CEO regularly informs the IPTO BoD about the actions taken.

### Performance evaluation of the highest governance body

e, The Company's highest governance body is the
 rs General Meeting of Shareholders. The Board of
 Directors is supervised and elected by the General
 Meeting of Shareholders.

#### **General Divisions**

ers, ness ttee bosals	<ul> <li>The General Divisions of IPTO are the following:</li> <li>General Division of Financial Services</li> <li>General Division of Technology, System Planning &amp; Strategy</li> <li>General Division of Operation, Infrastructure &amp; Market</li> <li>General Division of Human Resources, Legal &amp; Regulatory Issues</li> <li>General Division of Asset Management &amp; Maintenance</li> </ul>
it of the	Organisational changes – new Divisions Two new divisions were created in 2020. The first is the new General Division of Asset Management & Maintenance. Its mission is the optimal asset

is the new General Division of Asset Management & Maintenance. Its mission is the optimal asset management of the Electricity Transmission System (transmission lines, HVCs and Substations) through the design and implementation of the appropriate methodologies and the necessary information systems. In addition, an International Relations Division was created, highlighting the importance of strengthening international interconnections for electricity transmission.



# Contribution to sustainable development

The main objective of our operation is to develop a reliable, sustainable and resilient Transmission System that allows equal access to electricity for all, while contributing to the country's sustainable economic growth.



Ensuring electricity transmission

Prior to decision making for the



### Sustainable development strategy

Our role as Operator of the Hellenic Electricity Transmission System means that we have increased to be completed by 2030, and through mainland responsibility for the sustainable development of the entire country. As the energy mix in Greece is changing rapidly, IPTO, like other European Operators, aims to facilitate and accelerate this transition, by exploring more and more new possibilities and opportunities in the new conditions being formed both at national and European level.

To further integrate the principles of sustainable development in the way we operate and to optimally manage sustainable development issues related to our operation, we decided to proceed with the mapping of our strategy's main elements regarding sustainable development, as well as our priorities and goals.

To achieve this, we took into account both the opinion of our stakeholders and the United Nations Sustainable Development Goals, as well as the results of our materiallity assessment regarding sustainable development.

The main pillars of our sustainable development strategy concern the Company's further network development and digital transformation, allowing it to become a technology company dedicated to the utilisation of infrastructure and know-how.

At the same time, IPTO will contribute substantially to the implementation of the national strategy for decarbonisation and energy transition, through

the Aegean islands interconnections, expected upgrades, which will allow the connection of additional RES to the country's Transmission System. In this context, IPTO's goal is to reduce the energy footprint of its network, facilities and buildings.

The third pillar of IPTO's strategy for sustainable development is the protection of environment, aiming at minimising the impact on land and marine environment from the network operation as well as from new interconnection projects.

Finally, emphasis is also placed on smooth cooperation with local communities in the areas where we operate and implement new projects, as well as in our internal working environment, with a focus on creating conditions of safety and equal opportunities and with respect to diversity.



Our role as Operator of the Hellenic Transmission System is de facto interrelated with the sustainable development of the country itself as it is closely linked to the transition to a low-carbon economy. Our sustainable development strategy

Our role as Operator of the Hellenic Transmission System is de facto interrelated with the sustainable development of the country itself as it is closely linked to the transition to a low-carbon economy



represents our vision for our responsible operation and our development as HETS Operator in the upcoming period, contributing decisively to the country's sustainable development.

#### Our contribution to the Sustainable Development Goals (SDGs)

The United Nations Sustainable Development Goals (SDGs) aim to address the main challenges humanity is facing worldwide, such as poverty, climate change, environmental protection, gender equality, hunger, access to education, etc. Through our role as Operator of the Hellenic Electricity Transmission System, we clearly and significantly influence the course of achieving the Sustainable Development Goals in the country. The following table shows how we contribute to the achievement of the United Nations Sustainable Development Goals at national level.

#### Presentation of the IPTO's Group contribution to the achievement of the United Nations Sustainable Development Goals (SDGs) for 2020

### Sustainable Development Goals and sub-goals related directly or indirectly to our activity

IPTO's contribution

1 Poverty	1.2) We are helping to reduce the number of men, women and children living below the poverty line in all its forms.		We provide income to 1,607 permanent and temporary staff on an annual basis.
/॥ # 11 11 11 11	1.3) We have in place appropriate social protection systems and measures to achieve effective coverage of vulnerable	•	We are developing the network in order to ensure that all citizens have an adequate and safe supply of electricity.
	populations. 1.5) We help to eliminate the exposure of vulnerable populations to economic, social and environmental problems.	•	Through new interconnections and the supply of green electricity to the country, we help reducing th cost of energy, making it more affordable for all, wh contributing to the reduction of the cost of Utilities for all.
3 GOOD HEALTH AND WELFBENG	3.9) We help reduce the number of deaths due to hazardous chemicals, air, water and soil pollution and contamination	•	We implement interconnection and integration of RE achieving decarbonisation at local and national leve We connect the Aegean islands with the Mainland System paving the way for the closure of polluting local production units. We design and implement projects that are in full compliance with current environmental legislation. We apply strict measures to limit electromagnetic radiation within the permissible limits established b the World Health Organization.
5 GENDER EQUALITY	5.1) We contribute to ending all forms of discrimination against women.	•	<ul> <li>3% increase in female employees compared to the previous year.</li> <li>1% increase in the representation of women in positions of responsibility.</li> </ul>



7.1) We ensure equal access to afford reliable and modern energy services

7.2) We contribute to the increase of renewable energy sources' share in t global energy mix.

7.3) We contribute in the energy effi

7.a) We support research on clean enter technologies and promote investme in energy infrastructure and new technologies.

7.b) We are expanding our infrastruct achieve the provision of sustainable services in the country's islands.



8.1) We contribute to the country's p capita economic growth.

8.4) We contribute to our economic growth by separating it from environ degradation, promoting a framework sustainable production and consump

8.5) We contribute to full and produce employment and decent jobs for all vand men and for young people.

8.8) We protect labour rights and prosafe working conditions for all emplowithout discrimination.



9.5) We contribute to the strengther of scientific research and the upgrad technological capabilities in the indu sector.

dable, s. f the the	•	We implement <b>new interconnections</b> of the Aegean islands with the Mainland System, allowing the <b>connection of a greater rate of RES to the System</b> , addressing the <b>energy isolation</b> of the islands and <b>increasing the reliability of supply</b> .
iciency	•	Commencement of commercial operation of RES units of up to 15MW power in the Interconnected System: 649 MW
nergy ents	•	New RES installed capacity in the Interconnected System: <b>786 MW</b>
ture to	•	We are developing the International Interconnection Network with Bulgaria, Italy, Albania and North Macedonia for decarbonisation transition.
energy	•	Through the Research, Technology and Development Division (DETA) we actively participate in 11 European Research Programmes in the framework of Horizon 2020 and 1 research collaboration with the European Space Agency (ESA) in order to ensure the optimal integration of future RES penetration rates.
er	•	Our total activity created € 295.85 million in added value in the country's GDP.
nmental k of otion	•	We apply a <b>Strategic Environmental Impact</b> Assessment (SEIA) to the Ten-Year Development Plan projects in order to identify, describe and evaluate the potential impacts of our activities.
ctive women	•	We cover 100% of our employees with full-time contracts and a collective bargaining agreement.
omote byees	•	In 2020, we spent 48,644 euros on employee training and development.
ning ding of ustry	•	We are making investments of €5 billion over the next 10 years.
	•	Through the Research, Technology and Development Division, we participate in the preparation of the ENTSO-E Research, Development & Innovation Roadmap for the implementation of new methods and technologies in the Greek and European Energy System.
	•	We work in partnership with innovators

11 SUSTAINABLE CITIES AND COMMUNITIES	<ul><li>11.1) We contribute to the strengthening of local infrastructure.</li><li>11.4) We contribute to the effort for the protection and safeguarding of our cultural and natural heritage.</li></ul>	<ul> <li>We have upgraded the telecommunication services in Greece by expanding the fiber optic network up 3,760km .</li> <li>We cooperate with Archaeological authorities to ensure compliance with Greek legislation in the areas covered by our network.</li> <li>We have invested €715,500 for the prevention and suppression of forest fires.</li> </ul>
12 RESPONSIBILE CONSUMPTION AND PRODUCTION	<ul> <li>12.4) We contribute to the proper management of all waste in accordance with internationally agreed frameworks and legislation.</li> <li>12.5) We contribute to the reduction of waste production through prevention, reduction, recycling and reuse.</li> </ul>	<ul> <li>We manage the waste produced in accordance with the existing legislation and regulations.</li> <li>We have proceeded with the implementation of insulating oil regeneration practice, achieving a 90% regeneration rate.</li> </ul>
13 Auton	<ul> <li>13.1) We strengthen the resilience and adaptability of our activities to the risks arising from climate change</li> <li>13.2) We contribute to the integration of climate change measures into national policies, strategies and their design.</li> </ul>	<ul> <li>We have contributed to the reduction of lignite production by 9% in 2020.</li> <li>We have replaced the vehicles of older technology in our corporate fleet with 14 purely electric vehicles with almost zero CO<sub>2</sub> emissions.</li> <li>We contribute to the development of the regulatory framework for energy storage and offshore wind parks</li> </ul>
14 UFE BELOW WATER	14.1) We contribute to the prevention of all forms of marine pollution.	• We protect the environment and minimise any environmental impact as much as possible.
15 UPE DI LIAND	15.1) We contribute to the protection of natural habitats and the prevention of biodiversity loss.	<ul> <li>In the context of biodiversity protection, we conduct environmental studies for the Company's projects, as well as special studies, such as Special Eco-friendly Utilisation Studies.</li> <li>In consultation with local communities, we explore ways to reduce the impact of any project in the construction phase.</li> <li>We have replanted 4,810 trees in forest areas after the implementation of our projects.</li> </ul>
17 PARTNERSHIPS FOR THE GOALS	17.17) We seek for corporate partnerships and effective synergies between the public and private sector as well as with Civil Society.	<ul> <li>We are in close cooperation with the competent authorities of the Ministries, Regions, Forestry and Archaeological Services, constantly taking into account the concerns of local communities for the achievement of our goals.</li> <li>We participate in the ENTSO-E's RDIP and Flexibility &amp; Markets working groups for research and innovation development.</li> </ul>

### Material sustainability issues

The materiality analysis for sustainable development is a useful tool through which we define our approach for creating value for all of our stakeholders.

Both our sustainable development strategy and the Sustainability Report focus on the most material sustainable development issues related to our operation and activities.

In particular, to apply the requirements of the GRI Standards, we analyse the sustainable development issues related to our operation through a specific, suitably structured process, and conclude on the most material ones, always incorporating the opinion of stakeholders. In this context and with a view to the implementation of the principles of the GRI Standards for determining the content of the Report (Stakeholder inclusiveness, Sustainability Context, Materiality and Completeness), a structured process/ methodology with the following steps was followed:

a) initially, the sector's material issues were identified, taking into account the wider trends as well as the latest developments in the field of sustainable development at national, European and international level,

b) these issues were then prioritised and finally

c) the outcome of the procedure was verified as to its completeness and correctness and the results were validated.

The final result was reviewed and approved by the top management of the Company.

For the effective recognition and prioritisation of material issues, a special workshop was held with the participation of executives from all Company Divisions. During the workshop, issues related to the Company's sustainable development were discussed extensively, evaluated and received a score, taking into account both the degree of each issue's impact and the relative interest of our stakeholders. Issues with low score both regarding their impact assessment and the relevant stakeholders' interest were assessed as not material. Throughout this process we made sure that both the principles of the GRI Standards for defining Report content, alongside our stakeholders' views and concerns, were properly incorporated.

In order to capture these issues, both the significance of each issue's impact and the relevant interest of IPTO stakeholders are assessed. In addition, we took into account the United Nations Sustainable Development Goals (SDGs) as well as other relevant standards and initiatives such as the GRI Standards, SASB Standards and TCFD recommendations. The results of this process are presented in the following materiality matrix.

#### **Classification of material issues for IPTO**



Importance of social, environmental and economic impacts

IPTO's approach regarding the material sustainability issues, as well as the Company's performance in each of them, are presented in detail within the relevant sections of this Report.

#### **Boundaries of material issues**

The presentation of the performance on material issues concerns all the activities of the IPTO Group in Greece. The companies of the IPTO Group included in the annual consolidated financial statements are stated in the Annual Financial Report 2020 (Annual Financial Report for the year from 1 January to 31 December 2020, p. 6-7, Company website, Section Our Company, Financial Results, IPTO Group). The scope and boundaries of the material issues are defined within the IPTO Group.



### **Consultation with** our stakeholders

The particular nature of IPTO's role as Operator of the Hellenic Electricity Transmission System, both in the context of its operation and of the new interconnections at national level, requires constant contact, cooperation and consultation with its stakeholders. As stakeholders we define

#### Main stakeholder groups

Based on our activities to date, the Company has identified the main groups of its stakeholders as follows:



- Creditors (Banking institutions & other providers of capital)
- Shareholders
- · Financial analysts and rating agencies
- Media

Landowners

• Final consumers

way communication with our stakeholders, at our priorities are shaped on the basis of our institutional level, at local level and at market stakeholders' views, expectations, concerns and level. The company through its executives as priorities. well as the CEO himself, participates actively in communication and consultation processes Moreover, given that the views of our stakeholders with stakeholders. In addition to the statutory are taken into account for formulating the list consultation process with stakeholders that takes of important/material sustainability issues, the place as part of the development of the Ten-Year current Report includes both those issues and Development Plan, the Company proceeds with our responses, as well as the most important sustainability issues according to our own both informative actions and direct communication with representatives from the local communities, prioritization. before starting a project.

Our role requires us to be in constant two-

the social groups that are affected by and/or affect the operation and decisions of the Company.

• Government, Institutions, Public Authorities, Decision-making centres (in Greece and abroad) • Other Operators Local communities & NGOs

(through energy suppliers)

Business environment

- Employees
- Suppliers of energy, materials and services
- Contractors
- Customers-Network users
- High-voltage producers
- Innovation players (educational institutions, research centres, etc.)

It is clear that both our Company's strategy and

#### Stakeholder consultation and our activities' impacts management

The projects for the development and maintenance of the electricity transmission network cover the entire Greek territory and are particularly important as they result to a number of benefits for consumers, society, the economy and the environment, by reducing electricity bills and paving the way for gradually eliminating the dependency on polluting power plants.

Although the development of new projects in some cases causes disturbance at local level, through systematic dialogue and consultation IPTO seeks to meet the expectations and concerns of our stakeholders by undertaking specific actions for ensuring a sustainable future for local communities. Specifically, we follow the following general principles for managing the effects that may result from our activities:

- We engage in systematic dialogue with the local communities in which we operate, so that there is mutual understanding and effective communication about the benefit resulting from our projects.
- We work out alternatives for the routing of transmission lines in each of our projects, aiming at achieving consensual solutions and creating the least possible inconvenience during their construction.
- We inform the owners regarding the process of collecting their compensations, where expropriation of private land is required.
- We take continuous action and initiatives to support local communities following an open dialogue with them and we sometimes implement projects for the public benefit.

- We adhere strictly and rigorously to the limits set by the Greek legislation regarding electromagnetic fields, both for the general public and for our employees.
- We study and evaluate in detail the potential impact of our projects on protected species and habitats.
- · We take mitigation measures that eliminate, prevent or reduce to a negligible level the potential impact of a project. These measures include changes in the size, location and design of parts of our projects (e.g. deploy low noise transformers to reduce noise pollution) or may take the form of temporary adjustments during the construction and operation phases (e.g. avoidance of construction work during the migratory bird season).
- We consider alternatives when the effects of the planned project continue to be significant, even after mitigation measures (e.g. different location or undergrounding of the project, change of scale or development plans).
- We implement projects for the restoration and protection of the natural environment following completion of our projects.

#### Direct contact with our stakeholders at local level

In 2020, great emphasis was placed on properly informing the local communities in relation to the projects we have included in our plan. For this reason, it was decided that for every major interconnection project to be contracted, before the start of any works, a senior-level information meeting should be held (in the presence of the IPTO's Management), to directly and appropriately inform the local community about the necessity of the project, its description, milestones and benefits, the alternatives explored, the advantages and disadvantages of each alternative as well as the reasons that led to the proposed solution. Such meetings were held with the municipalities involved for the Crete-Attica electricity interconnection project (meetings with the Region of Crete, the Municipalities of Malevizio, Megara, Elefsina, Aspropyrgos), for the Skiathos electricity interconnection project (with the Municipality of Skiathos) and for the creation of the substation in Tinos (with the Municipality of Tinos).

#### Survey for the interconnection project between **Crete-Attica and Crete-Peloponnese**

During the projects for the electrical interconnection of Crete-Attica and Crete-Peloponnese we acknowledged the importance of the local community and we have designed and implemented a careful communication strategy in order to mitigate possible reactions and remove reservations. The communication strategy promoted the benefits that the local community will derive from the project and refuted any inaccurate information about possible negative effects.

Within this strategy we carried out an extensive study that reflected the current attitudes and perceptions of the inhabitants of Crete towards the interconnection project of the island with the mainland, its benefits and potential disturbances.

More specifically, we conducted a telephone survey targeting the permanent residents of Crete (sample: 1,000 persons), which mainly attempted to investigate the recognisability of both IPTO and the project itself. Subsequently, with targeted questions, we attempted an examination of attitudes and perceptions for the interconnection project, with particular emphasis on the potential benefits that will arise, the concerns of the local community as well as issues related to the utilisation of the island's renewable energy sources.

In addition, we carried out an electronic survey targeting Crete's permanent residents (sample: 1,537 persons) with the objective to verify, using different techniques, the recognisability of IPTO and the project, as well as to detect emotions emerging from the visual contact with power plants and facilities and with projects utilising renewable energy sources.

This survey was an important step for the interconnection of Crete-Attica and Crete-Peloponnese, as it led to significant benefits both for the successful implementation of the project and for the local communities.

#### Development of new tools and communication channels with our stakeholders

In order to better inform IPTO stakeholders and to provide more effective access to information on HETS and on the achievement of the national and European objectives for energy transition, various communication channels were created.

The first step was taken with the creation of a new IPTO website (in Greek and English) that provides upto-date information on an ongoing basis on:

- all the new projects we are implementing and their financing,
- the procedure for registration in the HETS Operator Registry
- short-term load adequacy forecasts
- weekly balancing market reports • monthly energy reports
- financial results

At the same time (2020) a corporate page was created on facebook and a group of employees was formed to manage IPTO's central communication e-mail (info@admie.gr), with the aim of responding immediately to the public's requests, while for 2021, we have planned our call centre reconstruction.

#### Contribution to the dialogue on improving the regulatory framework

In the context of IPTO's responsibilities and in accordance with the provisions of Law No. 4001/2011 and the System Operation Code (SOC), IPTO prepares and publishes the Ten-Year Network Development Plan (TYNDP) of the Hellenic Electricity Transmission System, which is issued annualy on a rolling basis. Once completed, the Preliminary Draft of the TYNDP is put to public consultation by IPTO, in accordance with the provisions of Article 229 of the Grid Code of the HETS, inviting interested parties to submit their views to IPTO's e-mail.

One of these tasks is to improve the regulatory framework of the country to which the Directorate for Legal and Regulatory Affairs makes a decisive contribution. With its help, IPTO performs the following tasks:

- It follows the developments and amendments made to the Greek, European and international legislation and case law regarding the regulatory framework.
- It monitors international regulatory practices and trends, developing its strategic approach, managing regulatory issues and coordinating the relevant communication with the competent bodies and entities.

For example, IPTO's contribution is significant for the development of regulatory frameworks for offshore wind parks, as well as for including lowcost energy storage systems into the energy mix.

### **Operating with respect** to local communities and the environment

IPTO ensures that maintenance work and development activities of the transmission system are performed with the maximum possible

#### Benefits for local communities

IPTO is in constant consultation with local communities, taking into account the disturbance that may be caused during the implementation of a project as well as the concerns that may arise at a local level. In this context, meetings or informative events are held with the public authorities of local communities.

#### **Participation of IPTO** in offshore wind parks consultation

One of the main IPTO activities is the design and rational development of high voltage networks. It is often necessary to modify a project's design in order to speed up licensing procedures, while it is important to have a clear institutional national framework for RES development.

The distance between offshore wind potential locations and the electricity grid is reduced due to the interconnections of Aegean and Ionian islands that bring the electricity industry closer to offshore wind energy.

In order to facilitate stakeholders (investors, local communities, Ministry of Environment and Energy, RAE) to plan their next steps, IPTO participates actively in the public debate, proposing the development of a long-term strategy based on the following pilars:

• The integrated design and development of the Transmission System by IPTO, taking into account island interconnections in the Aegean, which are expected to be completed by 2030, and upgrades of the terrestrial network.

- The development of a transparent and robust regulatory framework based on the know-how from the development of RES in the mainland system.
- The construction of offshore networks in a way that minimises total cost and safeguards the operation of the Transmission System.
- The division of roles and responsibilities of stakeholders (state licensing bodies, RAE, IPTO, wind producers, etc.)

In particular, IPTO proposes the design of an integrated approach within a National Master Plan that includes data on wind capacity in different geographical areas and taking into account the requirments for Transmission infrastructures and the existing spatial constraints. This proposal will create a solid framework for stakeholders and investors initiatives.

#### Implementation of a cost-benefit study for the Crete-Attica electricity interconnection and the Cyclades' 4th phase

of the project, as described in the objectives of the project:

- Ensuring the smooth, reliable and cheaper supply of electricity to the Cyclades and Crete compared to the current situation.
- islands.
- Making the most of the region's rich RES potential.
- Reducing the cost of Utilities.

respect for the natural environment and the local communities in the areas where IPTO operates.

Also, in the context of the Company's policy for broad acceptance of its projects, it may:

- proceed to technical improvements of a project in order to minimise visual disturbance,
- agree with local communities on the implementation of public works projects.

In 2020, cost-benefit studies were completed for the Crete-Attica electricity interconnection project and the 4th Cyclades Stage. These studies took into account indicators of socio-economic well-being, CO. differentiation, RES integration, non-CO<sub>2</sub> emissions, environmental and social impacts.

The results of this cost-benefit study highlight and quantify the expected benefits from the implementation

• Ensuring security of electricity supply from the HETS and putting an end to energy supply isolation of

• Reducing the environmental impact and burden caused to the environment of the South-West Cyclades island complex and Crete by the existing oil production plants. These plants operate near residential and tourist areas and will gradually restrain their operation until definitive closure.

#### IPTO covered the cost for the restoration study of a historical building in the Municipality of Skiathos

During the interconnection of Skiathos with the High Voltage System of Evia, IPTO approved the request of the Municipality of Skiathos and covered the cost for the restoration study concerning an iconic building of Skiathos, the Bourtzi, built in 1906 based on the two-class educational institute typology of that time. Nowadays the building is used for cultural events of the Municipality and other agencies.

The Municipality had secured funding for the restoration of the building and the surrounding area.

The request for restoration study costs was made by the Municipality of Skiathos during a meeting regarding the island's interconnection with the High Voltage System through Evia. IPTO approved the request and then assigned the study to the office of Giannis Kizis, Emeritus Professor at the National Technical University of Athens. The study will be submitted to the Central Council of Modern Monuments of the Ministry of Culture, through the Service of Modern Monuments and Technical Works of Thessaly and Central Greece.

The Bourtzi requires immediate repairments of roofs, facades, window frames and the surrounding area, while the most important work will be the restoriation of the north-eastern area of the retaining wall. Moreover, the works will include all the necessary infrastructrure for people with disabilities or limited mobility.

#### Measures to reduce visual disturbance and electromagnetic radiation

In some cases, the Company's new projects development and/or its existing infrastructure may cause visual disturbance at local level. IPTO is committed to reduce, as much as possible, disturbance and any negative effects in general, caused by new projects or the existing infrastructure.

In particular, with regard to electromagnetic (E/M)radiation, IPTO strictly adheres to the limits set by the international non-profit scientific organization for the protection of humans against non-ionizing radiation (ICNIRP), which operates under the World the lowest possible levels, the following practices Health Organization (WHO) auspices. In fact, the usual measurements related to our activities prove that the observed electric fields are well below the limit set by the relevant Joint Ministerial Decision of 2002, (Electric field intensity  $E \le 5,000 V / m$ ), and the magnetic fields are often 50 to 100 times below the specified limit (Magnetic induction B ≤ 100 µT).

Respectively, in the case of visual disturbance, its reduction is always sought in the direction of the

optimal cost-benefit balance for both the local communities and for the wider society as a whole. Undergrounding of transmission lines entails increased costs compared to overhead lines, which results in increased costs in the electricity bills. It is therefore important to choose the appropriate mode of transmission for electricity based not only on the reduction of visual disturbance, but in a balanced way, taking into account the corresponding increase of the electricity bills.

In order to achieve visual disturbance reduction to are applied:

- The route for all new overhead lines is far from residential areas, including individual farmhouses or warehouses.
- Transmission lines near or within residential areas are placed underground and not overhead.
- When the transmission lines are close to settlements, tubular poles (masts) are used

instead of lattice towers (pylon). The area and volume occupied by a mast is much smaller than the area occupied by a transmission tower.

• The construction of a substation and a high voltage centre within the cities or areas with

#### Consensual solution with the Municipality of Malevizi for the creation of the minimum visual disturbance of the Crete-Attica interconnection project

A series of consultations were organised with the Malevizi Municipality and the local community following their strong concerns about the possible impacts of the transmission line crossing from the Korakia area to Damasta and the installation of a conversion station in the village of Damasta..

The residents' initial concerns focused on:

- station constrution and along the transmission lines.

These concerns led residents and the Municipality to oppose the project and call for a route change. During the first meeting with the Municipality and in order to address the residents' concerns on health issues, IPTO proposed that the Municipality should assign to a research institution of its choice, to audit the Environmental Impact Assessment of the project and asses whether there is a health risk and whether the chosen location for the conversion station is the best of all alternatives proposed for the stability of the System of Crete.

The Municipality chose as its technical advisor the Technical University of Crete (TUC). After carrying out a thorough research, TUC assured the Municipality through a public announcement that based on the technical characteristics of the project there is no risk for the health of the residents. It also explained that the alternative location of the station in the Korakia area proposed by the residents had been investigated by IPTO, but it appears that it would have a greater impact on Damasta in terms of System security, causing even more visual disturbance.

Following the consultations with the Municipality of Malevizi, IPTO made improvements to the project in order to minimise the visual disturbance. Specifically, the transmission line from Korakia to Damasta will be underground and the Conversion Station will be constructed in greater depth so that it is not visible from the village of Damasta.

The City Council of Malevizi and the people's assembly of Damasta accepted almost unanimously the improved proposals of IPTO and consented to be part of the project's route.

special physical characteristics, such as the Cycladic islands, is a closed type GIS (Gas Insulated Switchgear).

• matters relating to the effects that electromagnetic radiation may have on their health and

• the visual disturbance that will be caused in the historic settlement of Damasta by the conversion

#### IPTO is committed to reduce, as much as possible, visual and electromagnetic disturbance and any negative effects in general, caused by new projects or the existing infrastructure

### Supporting organisations and institutions

In order to actively participate in developments regarding the country's energy issues as well as sustainable development issues, we participate in a number of organisations and support initiatives related to sustainable development.

- CIGRE

International Council

on Large Electric

Systems (Greek &

International)

- CSR HELLAS

Responsibility

Hellenic Network

for Corporate Social

- G.E.MI. General Electronic Commercial Registry

— EASE Association of Chief Executive Officers

- ACCI Athens Chamber of

Commerce & Industry

— HAEE Hellenic Association for Energy Economics

— HIIA Hellenic Institute of Internal Auditors

— IENE Institute of Energy for South East Europe

- UHCC Union of Hellenic Chambers of Commerce

— SEV Hellenic Federation of Enterprises

- EACD European Association Technical Chamber of of Communication Directors

> — IAM The Institute of Asset Management

IPTO also participates in the following organisations:

OAL — Joint Allocation Office

- SEE CAO Coordinated Auction Office in South East Europe

— TEE

Greece

- ACC

Association of

Corporate Counsel

- SEleNE CC Center

Southeast Electricity Network Coordination

#### We participate actively: European Network of Transmission System **Operators for Electricity (ENTSO-E)**

The European Network of Transmission System Operators for Electricity (ENTSO-E) represents 42 Transmission System Operators from a total of 35 EU countries and its mission is the integration of the European internal electricity market and its optimal operation.

IPTO is a member of ENTSO-E and has an active role in all of its activities, participating in the committees and the corresponding working groups for the design and implementation of Grid Codes, the implementation of pan-European Network development plans, the preparation of System adequacy studies and the coordination of research programs for the promotion of Research and Innovation (Market Committee, System Development Committee, System Operations Committee, Research and Development Committee). IPTO also participates in consortia for the implementation of projects related to the operation and development of ENTSO-E networks and chairs th Project Group "Turkey" for the interconnection of Turkey with the ENTSO-E Network.

Finally, IPTO has increased representation in the decisions of the Network, as its Chairman and CEO, Manos Manousakis, has been an elected member of the Board of Directors of ENTSO-E since June 2019.

— ENTSO-E European Network of Transmission System Operators for Electricity

— Med-TSO Mediterranean Transmission System Operators



### **Our "social product"**

IPTO's operation is particularly important for the country, not only because of its role as the Hellenic development of local communities and the Greek TSO, but also because of the important "social product" produced as a result of its operation. IPTO's social and economic contribution is significant for the areas of its activity and for the country's economy in general due to creation and preservation of jobs, added value creation and taxes paid to the state. In addition, significant value is also generated through expenses for the Company's suppliers, as well as donations and sponsorships for the entities we support. Moreover, these ammounts of money function as a positive contribution and often as a multiplier of the to the GDP.

Specifically, in 2020, the "social product" of IPTO Group amounted to a total of 263.7 million euros. In particular, the Group spent 165 million euros on salaries and benefits for its staff during the three-

year period 2018-2020, actively contributing to the economy in general.

Moreover, payments to government agencies (taxes, VAT, employers' contributions, etc.) amounted to 34.46 million euros in 2020, while for a total of 3 years (2018-2020) this amount sums up to 90.25 million euros.

IPTO's social and economic contribution is creation and taxes paid to the state

#### Annual contribution to social development - "Social Product" (in thous. euros)



	2018		2019		2020	
Social product (thous, euros)	Company	Group	Company	Group	Company	Group
Economic value generated						
Total revenues	266,490	267,074	296,155	300,381	293,667	295,854
Economic value distributed						
Operating cost	72,514	72,717	108,581	109,181	111,795	112,778
Employee wages and benefits	69,981	69,981	40,771	40,859	54,037	54,105
Payments to providers of capital	41,114	41,114	55,151	55,152	61,612	61,617
Total payments to government (taxes paid)	29,046	29,046	27,886	27,909	33,296	34,462
Community investments (donations - sponsorships)	425	425	24	24	750	750
Total "Social product"	213,080	213,283	232,413	233,125	261,489	263,712
Economic value retained	53,410	53,791	63,742	67,257	32,178	32,142

IPTO's "social product" allocation - 2020



### significant for the areas of its activity and for the country's economy due to creation and preservation of jobs, added value

### **Responding to** climate change

The steadily accelerating course of climate change causes an increasing number of adverse effects of rising tension, while at the same time climate change has a chronic impact on the environment and human beings.

IPTO's strategic planning takes into account the new conditions created by climate change in order to adapt to the new environment. Based on the current data and upcoming changes, the Company identifies the risks associated with climate change, as well as the potential opportunities.

In this context, one of the pillars of the new IPTO Strategy for the years 2021-2024 is to achieve security and reliability in a difficult environment. Specifically, IPTO accelerates and expands the System's asset renewal program, aiming to the renewal of all critical equipment of the System by the end of 2023.

This planning takes into account a number of parameters, including climate parameters which change at multiple levels, as the occurrence of extreme weather phenomena is now more and more frequent in our country. More details are provided in p. 67.

At the same time, IPTO's contribution to climate mitigation is particularly important at a national level. New interconnections enable the change of the country's energy mix by allowing the integration of a greater percentage of RES, and thus contribute to the transition to a low-carbon economy and the gradual decarbonization. This new environment also presents new opportunities for action, as the transition to a low-carbon economy can only be achieved through radical structural and technological changes in the energy system.

For more information, see Energy network and infrastructure.

### **Sustainable** procurement

Procurement of the appropriate goods (e.g. infrastructure, equipment, materials, services) in the appropriate quantity and quality, at the best possible price and at the desired time are an essential condition for our activities.

The main categories of IPTO contractors/suppliers are:

#### Percentage of expenditures concerning contractors



Fro the period 2018-2020, the total number of suppliers/contractors amounted to 363, with total supply costs being 671 million euros and the ratio of domestic to foreign suppliers being 89%/11% for 2020.

The objectives set for 2021 concern the creation of a Supplier Registry, taking into account that our Company's cooperation with the best suppliers

#### The transition to a low-carbon economy can only be achieved through radical structural and technological changes in the energy system



#### • Contractors/Manufacturers Civil engineering work contractors • Material suppliers and service providers

- Hardware/Equipment manufacturers
- Tansport companies

			89%	11%
	8	1%		19%
75%				25%
60%		80%	)	100%

is not only necessary but also essential, since the works, materials and services are critical and directly related to our operation. Another benefit of the Registry is to shorten tender procedures and, by extension, to increase IPTOs performance.



# Energy network and infrastructure

The Independent Electricity Transmission Operator (IPTO) aims to supply the country with reliable, efficient and green electricity, promoting the development of free competition in the Greek electricity market.



Investment for the Crete – Atti

New RES capacity installed in the system for 2020

of IPTO into a Digital TSO

Annual benefit for all through reduced utilities cost after the operation of the two electrical interconnections of Crete

the Crete - Attica interconnection



Four key parameters for the energy security of the country are listed below:

### Network adequacy, security, stability & reliability

IPTO's mission is the safe and uninterrupted supply of the Hellenic Electricity Transmission System (HETS) 24 hours a day, 365 days a year. According to the laws of physics, the production and consumption of electricity must be balanced at all times.

Employees in the Transmission System Operation & Control Department ensure this very balance, increasing production when more power is required or reducing production when there is more power than can be absorbed or transmitted.

Balancing is a fairly complex task and becomes even more perplexed with the constantly growing penetration of Renewable Energy Sources in the HETS which have a volatile and stochastic nature, as their injection to the HETS may change over very short time periods, depending on the time of day and weather conditions.

#### Responding to the challenges imposed by the high penetration of RES in the System operation

Despite the initial reservations expressed in the past, RES power plants have proved to be extremely reliable and functionally robust. Most wind and photovoltaic parks are connected to the System or the Network with power electronic devices which allow them to satisfactorily address any possible disturbances of the System (short circuits, voltage and frequency dips, etc.).

In addition, the new System codes, which have been drawn up by ENTSO-E and have been approved by the European Commission, currently constituting Community legislation, impose - among other things - specific technical operational characteristics for RES power plants, to ensure safe operation of the System in largescale penetration of alternative energy sources. To date, these codes are in their implementation phase, during which all European Operators in cooperation with ENTSO-E, carry out the necessary preparatory actions for their transposition to the Member-States' national law.

Overall, the operation of the system is designed and planned taking into account all the factors that Attica and backed up by the other Control affect it (weather conditions, special restrictions, data availability, etc.) and it is then monitored in

real time by the Energy Control Centre in Kryoneri, Centres.

IPTO's contribution to the country's energy security is crucial as the smooth, safe and uninterrupted transmission of electricity from the production points to the consumption ones must be ensured.

Availability

Reliability



We are in charge of serving the country's demand and supply of electricity uninterruptedly and under any conditions. We meet the demand for electricity in all parts of the country that are connected to the Transmission System, regardless of whether it is limited or extremely high.

Our responsibility is to ensure that the country's electricity supply is conducted in a safe, efficient and reliable way. anticipating the needs that will be created, taking care to implement maintenance and expansion projects of HETS and responding immediately in case of failure.

Respectively, the main factors that determine adequacy of the production system in terms reliable service of demand (energy and peak)

- Load variation (capacity and energy dema
- Availability of production units
- Hydraulic conditions
- Capacity availability for net imports from international interconnections
- Level of RES units penetration

The most critical factor related with product units, in terms of their contribution to the capacity adequacy of the production system is their availability. Production units may be of operation due to scheduled maintenance due to accidental failure. Accidental failures have an adverse impact on the adequacy of System, since both their occurrence and their duration cannot be foreseen. For this reason, the impact of unforeseen unavailability due to



Affordability

The development of the HETS is guided by ensuring the long-term capacity of the System to meet the reasonable needs for electricity transmission, under economically viable conditions, helping to reduce the cost of Public Utilities for all.

#### Sustainability



An important parameter for the System's development is the need to serve the large penetration of RES so that the National and European policies are implemented, ultimately aiming to reverse climate change with the electricity sector's contribution.

e the	accidental failures is assessed by a probability
of	simulation of production units function. As regards
are:	the other parameters that affect the adequacy
	of the System, due to their stochastic nature,
nd)	their impact is assessed by analysis of alternative
	scenarios and hypotheses. In this light, it is
	virtually impossible to guarantee that an electricity
	generation system will be able to fully meet the
	needs of demand under any conditions. Therefore,
	it is necessary to determine the desired level of
	reliability that the electricity generation System
tion	should ensure, so that the risk of not meeting the
	demand is economically and socially tolerable.
٦,	
out	Subsequently, in order to ensure the adequacy of
or	the country's electricity generation system, IPTO
may	prepares annually a detailed Electricity Generation
the	Adequacy Study with the purpose of identifying
ir	possible future risks in the system's ability to
,	adequately respond to the anticipated demand for
0	electricity over the years to come. Additionally,

this Study allows to determine the requirements in newly installed production capacity, so that the

energy demand is safely met during the period considered.

#### Immediate response to damages caused by severe weather events

We are fully committed to confront extraordinary and extreme phenomena affecting the System. In such cases, the Operator responds promptly and effectively by carrying out its nationaly crucial operation.

Such an event was the repairment of a double failure in the overhead transmission system of Andros, caused by gale force winds. These failures resulted in the power outage of two islands (Andros and Tinos) for some hours on 6/1/2020. However, power supply was restored within a few hours thanks to the immediate mobilisation and close cooperation of IPTO, HEDNO and the PPC, which allowed the rapid launch of the Autonomous Power Station (APS) of Andros and the supply of the island through the network of HEDNO. The uninterrupted supply continued via the APS until IPTO's technicians could travel to the island (immediately after the travel restrictions for ships were lifted) and repair the problems.

The Operator remains in full readiness to ensure secure power supply for the entire country and immediately intervenes, in so far as the weather conditions allow and always ensuring the safety of its staff, in order to repair any HETS problems caused by extreme weather events.

### **Development of the energy** transmission system

The development of the HETS is one of IPTO's main tasks based on its role as TSO.

IPTO consistently and quickly implements its Ten-Year Development Plan by utilizing its 5 billion euros investments and by interconnecting almost every Aegean island with the mainland system by 2030. The development of the System includes planning and making significant investments to ensure the adequate, safe, efficient and reliable supply of electricity across the country. At the same time,

these investments secure the long-term ability of the System to meet demand needs, under economically viable conditions and for the benefit of society and the environment.

The main vehicle for planning and scheduling these investments is the Ten-Year Development Plan.

#### The Ten-Year Development Plan (TYDP)

The Ten-Year Development Plan of the countr Transmission System is drawn up on an annua rolling basis and includes the System develop projects for its respective reference period, a as the basic philosophy followed for their des configuration and planning, also including the essary infrastructure for RES penetration, as timeschedules and estimated financial flows.

In particular, according to the latest ten-year (2021-2030), development projects include, a others, the following:

- necessary reinforcements of the System, su as new transmission lines, upgrades of exist transmission lines, new Ultra High Voltage tres (HVCs) and substations, as well as exte of existing Ultra High Voltage Centres or su tions, as required for the safe transmission power;
- modernization and upgrading of existing in structure (e.g. Substations and Ultra High age Centres), as well as their respective con infrastructure, necessary works to improve op

#### INTERCONNECTION IMPLEMENTATION PLAN UP TO 2030

Category	Interconnection area	Phase	Delivery and operation		
Domestic interconnections	Cyclades	Phase A: Lavrio-Syros and Syros-Tinos- Mykonos-Paros	Completed in 2018		
		Phase B: Paros-Naxos, Naxos-Mykonos	The project was completed in 2020		
		Phase C: Second interconnection Lavrio-Syros	The project was completed in 2020		
		Phase D: Western and Southern Cyclades (Santorini, Milos, Folegandros and Serifos)	In 2020, two tenders were announced for the interconnection of Santorini, while the expected completion of the project is in 2024		

ry's al oment as well sign,	eration and economy of the System, such as the reinforcement of the existing Ultra High Voltage Centres and construction of new transmission lines to best serve the needs of System Users,
e nec- well as	<ul> <li>integration into the System and/or the upgrad- ing of new interconnections with neighbouring countries,</li> </ul>
plan among	<ul> <li>projects for connection to the System (transmission lines and substations) required for integrating new power plants and new high-voltage consumers (high-voltage customers and Network)</li> </ul>
uch ting Cen-	Operator). Relevant connection studies have been completed,
ensions ubsta- of the	<ul> <li>development of the necessary infrastructure, such as measurement collection systems (SCA- DA), telecommunications backbone network, telecommunications links between Substations</li> <li>Ultra High Voltage Centres and the Energy Con-</li> </ul>
nfra-	trol Centres, development and software instal-
Volt-	lation in accordance with the requirements for
ntrol	safer and more efficient operation of the System
op-	and the electricity market

Domestic interconnections	Crete	Crete-Peloponnese	In 2020, electrification trial was successfull, while the completion of the project will follow in the first half of 2021
		Crete-Attica	The tender for cable and converters contractors was completed in 2020. The project is expected to be completed in 2023 or early 2024
	Skiathos	Mantoudi-Skiathos	In 2020, the submarine cable project between Skiathos and Mantoudi was completed. The project is expected to be completed in 2022 with the construction of a new substation in Skiathos
	Peloponnese	Megalopolis-Korinthos, Attica (Eastern corridor)	In 2020, electrification trial was successful. The project will be completed in 2021
		Megalopolis-Patras-Western Mainland (Western Corridor)	95% completed
	Dodecanese	Korinthos-Kos-Rhodes-Karpathos	2027: Estimated completion of interconnection
			2028: Estimated year of operation
	Islands of the Northeastern	Phase A: Nea Santa-Limnos-Lesvos	2029: Estimated completion of the three phases of the project
	Acgean	Phase B: Aliveri-Skyros-Lesvos-Chios-Kos- Samos-Rhodes-Karpathos	2030: Estimated year of full operation
		Phase C: Lesvos-Chios-Samos	
International interconnections	Bulgaria	2nd interconnection with Bulgaria	In 2020, the part of the interconnection with Bulgaria was contracted. The tender for the Greek part will take place in 2021. The completion of the second Greek- Bulgarian interconnection is expected in 2022

#### Upgrading of the Koumoundourou Ultra High Voltage Centre (HVC)

Apart from the aformentioned projects, reinforcement and development of the System projects are scheduled, with the most important being the reconstruction of the Koumoundourou Ultra High Voltage Centre.

In 2020, a tender was announced for replacement and extention of 400kV and 150kV switchgear of the Koumoundourou Ultra HVC in Aspropyrgos with modern closed type equipment (GIS), and the addition of new power autotransformers and compensation self-inductors. The new Ultra HVC will supply twenty one 150kV lines and four 400kV lines, taking over a significant share of the electricity load in the Attica basin. The Attica-Crete cable (through the - under construction- Koumoundourou Converter Station) and the Eastern Corridor of the Peloponnese (Megalopolis-Korinthos-Attica) will be interconnected to the new facilities of the Ultra HVC. The total budget for the project amounts to 46 million euros and its construction is expected to last for 30 months.





Transmission System

### by 2024

Cyclades Peloponnese HVC

#### Major projects to be constructed

- Interconnection of Crete Interconnection of Northern
- Interconnection of Southern and Western Cyclades
- Second interconnection between Greece and Bulgaria
- 400kv System Expansion in the
- Reconstruction of Koumoundourou

#### Major projects planned by 2030 Interconnection of the Dodecanese Interconnection of the northeastern Aegean New 400kV Filippi-Nea Santa station Argyroupoli HVC

#### Development of the Transmission System: Projects completed in 2020

Completion of Phases 2 and 3 of the Cyclades

Phase 2 of the project for the Cyclades interconnection was completed in September 2020 with the interconnection of Naxos to the High Voltage System and includes the following subprojects:

- Connection of Paros and Naxos with a 7.6km long three-core submarine cable.
- Connection of Naxos and Mykonos with a 40km long three-core submarine cable.
- New GIS Substation on Naxos, as well as the connection works at the Substations of Paros and Mykonos.

Along with Phase 2, oil-cable connections Andros-Livadi (14.5km, South Evia) and of Andros-Tinos (4km) were replaced with new submarine cables. The upgrade was completed in early 2020.

Phase 3 of the Cyclades interconnection will be completed with the installation of the second subsea cable of Lavrio-Syros and the required connection works at Lavrio and Syros. The aim of Phase 3 is to ensure operational reliability for any demand variation of the interconnected islands. This project was completed and commissioned in October 2020. Crete - Peloponnese Interconnection

The Crete-Peloponnese interconnection is the first phase of the interconnection of Crete with the HETS. In 2020, the Substations at the Peloponnese and Chania were completed, as well as the underground transmission lines in Crete and the Peloponnese, one subsea cable line and most of the overhead lines in the Peloponnese, which allowed for a successful electrification test in December 2020. The second submarine cable, final arrangements of the overhead lines in the Peloponnese and the STATCOM will be completed in the next period, to ensure that the interconnection will be operational before the summer of 2021. The project is co-funded by the EU and the NSRF (2014-2020) and is financed by the European Investment Bank. The total budget ammounts to 356.4 million euros.

The Crete-Peloponnese interconnection is called the "record-breaker interconnection" as it is:

- The longest AC cable interconnection in the world (174km)
- The longest high voltage submarine cable with triplex XLPE insulated cable in the world (132km)
- The deepest submarine high voltage interconnection with triplex XLPE insulated cable in the world (depth 1,000m)



### **Crete-Attica Interconnection:** A decades-long vision becomes reality

The energy interconnection of Crete with Attica becomes a reality with Ariadne Interconnection, a 100% subsidiary of IPTO Group. The largest project in the history of the Greek electricity system, worths 1 billion euros and ensures significant economic and environmental benefits for all citizens.

#### Identity

The electrical interconnection between Crete and Attica is one of the top five most innovative direct current projects in Europe. It includes two 335km long submarine 500kV cables with 1,000MW total transmission power. The cables are submersed to a record depth of up to 1,200m, on the seabed of the Aegean.

Two state-of-the-art ultra-high voltage centres are being constructed at the interconnection's ends -the Koumoundourou converter station in Attica and the Damasta converter station in Heraklionas well as a 150kV GIS substation. During the preparation of the project, IPTO took into account the requests of local communities for minimisation of visual and environmental disturbance.

#### **Progress**

The project was contracted in June 2020 in Heraklion, Crete between Ariadne Interconnection and the contractors Prysmian, Nexans, NK-Hellenic Cables and Siemens-TERNA.

The Environmental Terms Approval Decision (AEPO) was issued in April 2020. The estimated completion date of all the electrical interconnection sections is the end of 2023 or early 2024.

#### Innovation

The Crete-Attica cable interconnection uses a 500kV DC voltage utilising the latest Voltage Source Converter (VSC) technology, which makes it the first interconnection of this type in the Mediterranean. With a transfer capacity of 1,000MW, it is the most powerful island interconnection in the world, together with that of Sardinia. The submersion of cables in depths reaching 1,200m, places the project among the top three of the deepest interconnections worldwide. It is the largest energy infrastructure that the country has acquired and it engages some of Europe's leading manufacturers.

#### Benefits and added value

The new interconnection has important economic, social and environmental benefits. In economic terms, the first full year of operation (2024) of the two electricity interconnections of Crete, consumers on country level will save 550 million euros per annum through reduced electricity bills. This benefit will gradually increase, reaching 1 billion euros in 2030. The social benefit of the project will be the opening of more than 2,000 jobs needed for the construction works. Finally, local stations will be permanently shut down leading to CO2 emissions reduction by 500,000 tonnes while pollutants for energy production on the island will be reduced to zero.

The higher quality and reliability of electricity supply is expected to be immediately noticed especially during the summer, when the demand for electricity peaks due to tourism. From the first moment of Crete's full integration into the electrical System, everyone will enjoy the benefits of a cleaner atmosphere together with a more sustainable environment.



335km Two underwater cables

500kV Voltage





CO<sub>2</sub> emissions for energy in Crete

It is the largest energy infrastructure that the country has acquired and it engages some of **Europe's leading manufacturers** 









annual benefit for everyone



Jobs

#### International interconnections

A tender for the Greek part of the second international interconnection between Greece and Bulgaria will be completed in 2021. At the same time, IPTO is very close to an agreement concerning the construction of a second interconnection with Italy, while there are discussions about new interconnections with Albania and North Macedonia. Moreover, the plans to upgrade the Greece-Turkey interconnection (the interconnection of the European with the Turkish Transmission System) are maturing.

The development of international interconnections plays a central role in the development strategy of the Operator, as it contributes substantially to the stability of the System and the convergence of prices between different European regions. In this context, IPTO cooperates with neighbouring Operators to assess possible alternatives to strengthen transnational interconnections.

- 1. Greece-Bulgaria: The construction of the new interconnection involving a 400kV overhead line between the Ultra High Voltage Centre of N. Santa and the Maritsa East 1 Substation, will be completed six-months earlier than planned, so it will be ready by mid-2022.
- 2. Greece-Italy: IPTO and TERNA will soon examine alternatives for the development of a new subsea interconnection between the Hellenic and the Italian Systems, while the two TSOs will expole the possibility of leveraging existing infrastructure. Current estimates indicate that the need for increased interconnection capacity ranges between 500-1000MW.
- 3. Greece-Albania: The two TSOs are considering the design of a new 400kV connection line between the southern transmission system of the neighbouring country and an Ultra High Voltage Centre in Greece.
- 4. Greece-North Macedonia: Operators shall consider scenarios for upgrading the existing 400kV interconnection.

#### Project quality and on time delivery

Given the crucial role of IPTO's infrastructure, project quality and on-time delivery are significant parameters for design and implementation of projects. In this context, IPTO takes special care to ensure project completion within the required time limits, so that they can meet the needs at national

and local level, thus IPTO contributes decisively to the implementation of the national strategy for a low-carbon economy transition.

### **Energy transition**

Climate change is nowadays an undeniable reality which manifests itself through severe weather events. Therefore, the need to shield the country from its devastating consequences seems more urgent than ever.

Part of the solution is to limit the combustion of fossil fuels which are responsible for the release of greenhouse gases (GHGs), whilst the industry is moving towards renewable energy production. According to the National Plan for Energy and Climate, Greece aims to drastically reduce GHGs emissions in order to achieve the transition to a climate-neutral economy by 2050.

#### **Increased penetration of RES**

IPTO is responsible for implementing the country's large-scale interconnections paving the way for green investments and increased integration of RES into the HETS. Such projects produce and the economy.

In particular, reduction in the cost of energy production as well as carbon intensity (decarbonization), alongside reduction in



\*wind, photovoltaic and hydroelectric up to 15MW

#### Newly installed RES capacity (MW) in the Interconnected System

_							-
'ear	Wind	Photovoltaics	SHP*	Biomass	Cogeneration	Total	
2018	253	46	9	21	1	330	
2019	746	149	1	5	4	905	
2020	430	343	3	8	2	786	

\*Small hydroelectric power plants

#### Climate change is nowadays an undeniable reality, the transition to RES energy production is part of the solution to combat it.

- atmospheric pollution, are achieved through the reduction of air emissions due to fossil fuel combustion.
- important benefits for the society, the environment This trend is also reflected in the chart below. There is a significant increase over the last three years, prompted by the operation of 649 MW new renewable energy projects, as well as a newly installed RES capacity of 786MW in the HETS in 2020.

#### Newly installed RES capacity (MW) in the Interconnected System



Moreover, restructuring of the country's energy mix is planned by 2030 as well as an increase in the share of RES to at least 35% of the total gross final consumption. To achieve this goal, the National Plan for Energy and Climate prescribes a radical transformation of the electricity sector, as RES will replace fossil fuels more than 60% of gross final electricity consumption. According to the National Plan for Energy and Climate the target for 2030 is to eliminate the share of lignite in electricity production.

The rapid penetration of RES in electricity generation, expected by 2030, is also shown in the following table:

#### Evolution of installed RES capacity for electricity generation, until 2030, according to the National Plan for Energy and Climate

Power Generation – Installed Capacity (GW)	2020	2022	2025	2027	2030
Biomass & Biogas	0.07	0.09	0.12	0.23	0.32
Hydroelectric (incl. Mixed pumped)	3.42	3.66	3.72	3.83	3.86
Wind	2.83	3.19	4.04	5.16	6.62
Photovoltaics	3.54	4.38	5.33	5.81	6.76
Solar thermal stations	0.00	0.00	0.07	0.07	0.07
Geothermal energy	0.00	0.00	0.00	0.03	0.08
Total	9.87	11.33	13.29	15.14	17.71

#### Total installed RES capacity (MW) for electricity production up to 2030

2022		
2025		
2027		
2030		
0	4	8

At the same time, an important priority Ten-Year Development Plan is the inter of the Aegean islands with the mainland These interconnections tackle energy increase reliability of supply, reduce the energy produced and consequently the Utilities, protect the environment and high potential of RES. Alongide the ter

#### Affordable energy for everyone

IPTO aims to provide reliable, efficient ar electricity to the country, promoting the ment of free competition in the Greek ele market. A reduction of energy costs is ac through IPTO's activity and the new inter nection projects, as well as through the ment of free competition. The result is to consumers with clean and affordable ene indicative example is the annual saving of million euros that will occur since the firs

#### IPTO aims to provide reliable, efficient and green electricity to the country, promoting the development of free competition in the Greek electricity market



/ in the	of Aegean islands "ene
connection	in the size of the dome
d System.	occur.
isolation,	
e cost of	It is clear that IPTO play
e cost of	realization of the afore
everage the	objectives and it will c
mination	the future to an even q

ergy isolation", an increase estic electricity market will

ays a crucial role for the mentioned plas and continue to play this role in greater extent.

nd green e develop- ectricity chieved	of operation of both Crete's electricity intercon- nections (2024). This benefit will be visible in the reduced cost of Utilities in electricity bills for con- sumers nationwide.
rcon-	
develop-	
o provide	
ergy. An	
of 550	
st full year	

### **Target Model's** operation

IPTO entered the new electricity market on 1 November 2020. The new market that is fully compliant with the European Target Model, introduces competition by providing significant incentives for new market participants as well as attracting new investments and more efficient integration of renewable energy sources into the electricity market.

#### The Target Model

The so-called "Target Model" is the single wholesale market model applied in all countries of the European Union.

Its aim is to create a single European electricity market that removes trade restrictions, allows interaction between national markets and ensures equal access for everyone, so as to enhance competition and ultimately benefit the consumer.

This process will gradually bring significant benefits such as:



IPTO's role is central to this new model of operation for the national wholesale electricit market, as it is responsible for five distinct functions:

- calculation of the interconnections long-ter capacity,
- long-term capacity distribution using a com methodology,
- capacity allocation in the day-ahead market
  - intraday markets operation
  - electric energy balancing

In addition, IPTO manages and operates the Balancing Market which ensures the balance supply and demand and in effect the System' security. The Balancing Market consists of three stages: The Balancing Capacity Market, the Balancing Energy Market and the Imbalances Settlement.

The information systems which support the Balancing Market operation are the market management system (MMS platform), the coll and certification of measurements (MODESTC system), the management of interfaces (XBMS system) and the clearing of the Balancing Mar (MSS system).

During 2020, IPTO's new website was also launched, hosting a large amount of public market data mainly related to the Market and the System's

#### Integrating the Greek energy market with neighbouring markets

In the context of the Single Day-Ahead Coupli Project (SDAC), the Greek Day-Ahead Market coupled with the Italian one in 2020.

The Greek energy market coupling with that Bulgaria is planned in May 2021, followed by t integration of Greece in the continuous intrac trading (XBID) for both interconnections with and Bulgaria, by the end of 2021.

Market coupling achieves optimal use of interconnections capacity, the convergence energy prices between neighbouring countrie and the promotion of adequate cross-border capacity. IPTO plays a key role in both Day-Ah Market coupling and the Day-to-Day Markets, operates the critical interconnection capacity of electricity transmission.

ty rm nmon t	Operation. The data are accessible through all digital media, including the HTTP File Download API, used for automatically receiving files by external Information Systems. Additionally, in the context of the increased extroversion of the Operator, the website contains general information for users, such as graphs and key indicators, as well as a detailed description of the national regulatory framework, further enhancing the transparency and ease of access for the user. Finally, specific
-	analyses are published, such as the highly detailed and easy-to-use weekly balancing market reports.
of 's ree	Creating a common European electricity market brings benefits from cross-border competition, leads to fair and competitive wholesale market prices, enhances Europe's security of energy supply, contributes to the international goal of reducing GHGs emissions and to a decarbonised European economy. Such benefits are reaped not only by market participants, but also by all European citizens.
lection D S rket	

ing	IPTO as member of the RSC (Regional Security
was	Coordinator-SEIeNe CC) at Thessaloniki, will bear
	the interconnections between Greece-Italy and
of	Crocco-Bulgaria, alongside the interconnections
01 the	with per member states, to determine its
line	with non-member states, to determine its
day	long-term availability via transmission rights.
Italy	The estimated quantity is distributed through
	transmission rights auctions, carried out by Auction
	Houses, in which IPTO is a shareholder together
	with other Operators, such as: the Joint Auction
of	Office (JAO) for the European borders, and the
es	South East Europe Common Auction Office (SEE
	CAO) for the connections of Greece with Albania,
nead	Northern Macedonia and Turkey.
as it	

#### **Establishment of a new Regional Security Coordination Centre** in Thessaloniki

In May 2020, the new Regional Security Coordinator (RSC) for Southeast Europe under the name SEleNe CC (Southeast Electricity Network Coordination Center) was successfully established by four Energy Transmission System Operators: IPTO (Greece), ESO-EAD (Bulgaria), TERNA SpA (Italy) and Transelectrica (Romania). RSC headquarters are located in Thessaloniki (Greece), that is also the energy centre for Southeast Europe and the Greek-Italian borders.

RSCs play a key role in the operation of the electricity market and systems. On the one hand, they aim to maximize the capacity available in the market for energy exchanges, thus, ensuring optimal use of infrastructure and increasing competition in the wholesale market resulting in reduced electricity cost. On the other hand, RSCs secure the electricity systems and their short-term adequacy by offering the best option at an international level. Morover, they contribute to cost reduction of TSOs activities and minimize the likelihood of adverse incidents occurance (e.g. power outages, frequency disturbances) in large geographical areas.

At the same time, RSCs are promoting regional cooperation between TSOs which is now more urgent than ever due to challenges for Systems balancing caused by the increased penetration of RES, increased volume and variability of cross-border flows, including the gradual integration of energy storage.

#### Greece as a regional energy hub

In the context of enhancing and utilising the geopolitical role of Greece, international connections are also deemed considerably important (integration of existing and planning of new ones). Regarding the electricity market, the implementation of the following interconnection projects will be promoted within the next decade:

- Second interconnection between Greece and Bulgaria
- · Contribution to the Greece-Cyprus-Israel interconnection project through the implementation interconnection of Crete
- Upgrading the Greece-Republic of North Macedonia interconnection

### Energy mix determination

Electricity transmission from producers to consumers requires a smooth cooperation between power grids of different voltage. To ensure this, the grid control and management is achieved through appropriate tools and the regulatory effect of market. As a result, the System's operation and control uses solutions drawn from the electricity market, based on technical and financial offers, that are subsequently implemented in real time, mainly by

the National Energy Control Centre and the three Regional Energy Control Centres.

The main factors affecting the country's electricity demand on a medium to long term basis are the following:

- The country's economic conditions, with Gl being the key indicator
- Changes in consumer habits (air conditionir use of electricity in transportation, use of computers, use of LED lamps, etc.) due to improved living standards, notwithstanding improvement of living conditions for certain population groups (e.g. economic migrants
- The general situation in the energy sector a the electricity market (level of electricity pr competition with natural gas industry, etc.)
- Special conditions (e.g. development and implementation of financial mechanisms) Population growth
- Implementation of governmental policies, s as energy saving, upgrading buildings ener performance, etc.

Operational Planning aims to a safe operation of the HETS. Its basic procedures concern the planning of cut-offs for interconnections and elements of the HETS and for the Production Units, to ensure the uninterrupted electricity supply of the country and the reliable operation of HETS.

At the same time, the main pillars for the Operational Security Analysis of the HETS are the studies for capacity adequacy and reserve

Production estimate & interconnection	bala
50,106 GWh	

### 36% Natural Gas 17,815

11% Lignite Generated

5,722

11%

Production in the network 5,536

Demand in non-interconnected islands is not included.

- Production refers to the injection point in the System.
- A positive sign shows imports in the interconnection balance.

DP ng,	margins, as well as the creation of the Individual Grid Model, which records the network topology, regarding forecasts about production, load, and flows through the interconnections.
g the n i) and rices,	According to the data presented in the "Monthly Energy Report (2020)", the total production and imports-exports balance traded in 2020 amounted to 50,106GWh, out of which 44,570GWh were handled through the Transmission System. The remaining 5,536GWh concerned production in the Network (ranging from photovoltaics, biogas and small hydropower plants to high-efficiency combined heat-power units).
uch	
gy 1 e main	The distribution of electricity production based on different fuel sources is shown in the figure below. It should be noted that in 2020 the production share from RES and the Network was slightly increased (to 29% cumulatively from 24% in 2019) and the share of lignite production was reduced by half (to 11% from 20% in 2019).
ion of	

#### ance (GWh)

6%	
Hydropower Generated 2,901	
18%	
RES in system	
9,263	
18%	
Interconnection balance 8.863	

• Production in the Network is derived from certified measurements for Medium Voltage and estimates for Low Voltage.

### Asset management

Asset management includes activities that allow IPTO to operate and maintain its assets in accordance with the principles of sustainability, operational efficiency, quality and security, while optimizing investment returns to create value for its stakeholders.

This requires a structured approach, based on best practices that include the life cycle of infrastructures, taking into account both relevant costs and potential risks. At the same time, financial and technical parameters are combined with the management of the various phases that constitute the life cycle of an asset: design, construction, commissioning, monitoring, maintenance, repair/replacement, shutdown and finally removal (decommissioning).

The HETS consists of the Interconnected System of mainland and connected islands at high (150kV and 66kV) and ultra-high (400kV) voltage levels. The high voltage underground cable network that serves the needs of the capital area, falls under the remit of the Network Operator (HEDNO), which is responsible for its operation and development planning.

The basic HETS Equipment data, as of 31.12.2020, are described in the following table:

The Asset Management Department is responsible for the optimal management of the HETS assets, through the design and implementation of appropriate methodologies and necessary software systems.

Its main objective is to maintain a sound, strong and cost-effective power network infrastructure. In this direction, inspections and proposals are made to improve scheduled maintenance and to plan the renewal of electromechanical equipment, using available data about the condition and life cycle of fixed assets.

#### Asset management main objective is to maintain a sound, strong and cost-effective power network infrastructure

#### **Transmission System Equipment**

Transmissi	Total			
Overhead				
Submarine 910.61		12,393.39		
Underground	335.35	_		
Substations with IPT	O fixed assets (number)			
Converter	Converter 353			
link	link 8			
IPTO Tra	ansformers			
Nu	ımber	68		
Powe	17,787			
Connected User Transformers				
Number		710		
Power (MVA)		40,437		

#### Assets renewal programme

Security and reliability in a challenging environment is one of the new IPTO Strategy pillars for 2021-2024. The fact that the System is changing overall and the network is growing, creates new technological requirements. At the same time, increasing challenges arising due to climate change, render equipment renovation urgent. Even secondary elements of the system have to be upgraded in order to prevent power supply failures.

To this end, IPTO accelerates and expands the System's asset renewal program, which was drawn up in 2018. This was a rotating program, with a 80-90 million euros budget for the years 2021-2024. Following the Company's decision to accelerate and expand the Asset Renewal Program, a 200 million euros front-loaded plan was designed, with the first 150 million euros to be invested in the current three-year period. The program includes a

In this context, Asset Department coordinates the renewal and modernisation plan of the Transmission System's equipment and facilities over a five year period and implements important projects throughout the Greek territory as part of the Ten-Year Development Plan.

replacement of all critical operating elements aged above 24y, at national level. So, all critical System equipment will have been renewed, by the end of 2023.

This plan takes into account a number of parameters, including climate change, among others, as the occurrence of extreme weather events is now more and more frequent in our country. Moreover, the asset renewal program also includes cybersecurity, as the digital transformation of the Company is in progress.

#### Introduction of an Asset Performance Management System

One of IPTO priorities for 2021 is the introduction of an Asset Performance Management System (APMS), which will ensure optimal management of the Operator's assets through the control and evaluation of their condition, while permitting timely interventions to prevent errors and thus, significantly enhance the System's security and efficiency.

The new Asset Performance Management System, combined with an Online Condition Monitoring system, can support IPTO's strategy for the transition from Time Based Maintenance (TBM) to Condition Based Maintenance (CBM) of assets. It is estimated that the specifications for the procurement, development and operation of an integrated Asset Performance Management System will be completed by the end of 2021 and the start of the project is expected in the first quarter of 2022.

The new Asset Performance Management System will be fed by the existing GIS system, the new Enterprise Asset Management system and by operating data, in order to display assets in real time and provide results with great accuracy.

the Energy Control System maintenance became According to the European regulatory framework, extremely difficult and costly, as it was impossible SEleNe CC has advisory competences regarding to find spare parts and experienced technicians network security at regional level. required for older technologies.

At the same time, the Southeast Electricity Network Coordination Center under the name "SEleNe CC" was established in Thessaloniki, jointly with the Electricity Transmission Operators of Italy (TERNA SpA), Romania (Transelectrica) and Bulgaria (ESO-EAD) and is expected to begin its commercial operation in 2021. The four Operators have equal equity shares of the new Centre.

### **Digital transformation**

In order to adapt to the developments of the new digital era in the energy sector and the global economy, IPTO has placed the digitalisation of its operations at the centre of its strategy, contributing that way to the digital transformation of the whole country.

IPTO is transforming into a digital Transmission System Operator (Digital TSO). During this course it focuses on the following main business areas based on innovation and desired digitalisation.



Control Center at Kryoneri, Attica

#### Creation of a Network Operations Centre (NOC)

The System's operation depends heavily on the reliability of communications, without which it could not function. A Network Operations Centre is the backbone of every digital Company which relies on telecommunication services. As part of the System's operational upgrade, IPTO started to design its own new Network and Communications Control Centre.

The main role of the Network Operations Centre (NOC) is to monitor 24/7, control and manage the Company's telecommunications networks,

#### **Energy Control Centres turn digital**

Part of the digital transformation pursued by IPTO, where significant efforts are being made, is the digitalisation of the Energy Control Centres. To this end, Display Walls in the Energy Control Centres of the whole country were replaced with digital ones after more than 20 years of operation.

Specifically, control centres in Kryoneri, Ptolemaida and Thessaloniki were technologically upgraded, by modernizing both the software and technological equipment of the control rooms.

Accordingly, the preparation of a new Energy Control Centre in Crete was completed in 2020, while its operation started in early 2021. The need for such actions is dictated by the interconnection of IPTO's Mainland Transmission System with that of Crete. Main pillar of these interventions is to ensure an effective response to the new situation in the energy market. Something that is impossible to be accomplished with the existing means and infrastructure of the Energy Control System due to incompatibility with new technologies. Moreover,

This is deemed an important step towards complying the region with EU's third policy package. As part of the Clean Energy Package (CEP), SEleNe CC will transform into a Regional Coordination Center (RCC) in July 2022 with increased obligations and competences. The necessary preparations for this transition are underway.

ensuring a high level of availability. Therefore, a NOC is the basis of a Company's "nervous system". In terms of security, the NOC is the first line of defence against any potential attacks or external threats on the Company's telecommunications networks. It should be noted, that the new Network Operations Centre will also provide services to the telecommunications subsidiary Grid Telecom. Its contracting is expected in August 2021 and its operation in September of the same year.

#### Creation of a Cyber Security Operations Centre (SOC)

IPTO's digital transformation and the recent legislation on cybersecurity of Operators of Essential Services (OES) oblige the company to ensure protection of its digital infrastructure from cyber attacks. In the past, such events were rare, but in the modern, digital environment of OES the risks, even for blackout, are increasing, as recent cases have shown (Ukraine 2015). Apart from security design and integration of additional malware protection systems, it is also extremely important to have continuous monitoring, correlation and evaluation of events generated by digital infrastructure. Therefore, it is possible to identify cyberattacks in a timely manner and take immediate action to combat them.

For this reason, the Cyber Security Operation Centre (SOC) performs a vital function within an organisation that employs people, processes and technology, to continuously monitor and improve IPTO's cyber security, while preventing, detecting, analysing and responding to incidents in cyberspace. SOC's main advantage is the improvement of security incident detection through continuous monitoring and analysis of data activity. By analysing the activity of networks, **3.** Network Access Control endpoints, servers and databases around the clock, the SOC team is critical for timely detection and response to security incidents. 24/7 surveillance provided by SOC gives IPTO the advantage to defend against incidents and intrusions, regardless of the source, time of day or type of attack. In this way, SOC prevents malicious actions by groups that may try to harm the

company and the country by creating problems in the uninterrupted electricity supply of businesses and households.

On that note, IPTO's cybersecurity mechanisms block (prevent) 20,000-30,000 malicious messages every day and 80,000-100,000 malicious attempts for connection with the company's network.

In fact, no critical cybersecurity breach has been identified in IPTO's systems to date. Moreover, no system has collapsed due to a cyber-attack and no shutdown has occurred.

However, for 2021-2023, to further enhance cybersecurity and infrastructure resilience (Cybersecurity Resilience), the Cyber Security Operations Centre (SOC) plans to acquire new generation equipment & software, consisting of:

- 1. A Modern Platform for the Management of Security Incidents (SIEM & SOAR Platform)
- 2. IT & OT (ICS) Threat Detection System
- 4. Platform for Intelligent Analysis of Cyber Attacks and Threats
- 5. Cloud and Remote Access Security
- 6. NG endpoint protection

8. Multiple Factor Identity Verification

It will also acquire an integrated risk manage and business continuity system, that will incl the following:

- 1. Enterprise Risk Management (ERM)
- 2. Business Continuity Plan (BCP)

#### Digital map of transmission towers

IPTO initiated a procedure for the identification of transmission towers geographical coordina in order to digitize this information. For this digitisation IPTO used orthophotographs from 2016, granted to it for free by the National Cadastre. The method used is considered to the most cost-efficient and the fastest for upo the tower centre for the entire country, achieved a great level of accuracy (97%). The advantag this project are that available data now meet National Cadastre's specifications for safegua IPTO's assets, such as its transmission towers the land parcels in which they are located.

Moreover, apart form the aforementioned Asset Performance Management System, the goals for the next four years are:

er	3. Incident Response Plans (IRPs)
	4.Penetration Testing
	5. Cybersecurity Awareness Training
ment ude	6. ISO-27001 Certification
	7. Review and revision of policies and procedures or preparation of new ones
	<ol> <li>Cloud-based System (IaaS &amp; SaaS) Security Strategy.</li> </ol>

on	<ul> <li>The first until now large-scale inspection</li> </ul>
ates,	of transmission lines, with combined use of
	manned and unmanned aerial vehicles and
n	other technologies such as LiDAR, multispectral
	cameras, optical and infrared cameras for
be	vegetation and works' management, pilot use of
dating	satellite data, creation of digital terrain models
ving	and preventive maintenance.
es of	
the	<ul> <li>The upgrade of HETS GIS platform by using</li> </ul>
arding	fiber optic networks as well as state-of-the-art
and	functionalities.

• Coordination of an extensive plan for the renovation of the HETS by 2025, which will modernise the equipment and ensure network reliability.

#### New software systems

The company is in the process of acquiring and installing three modern and sophisticated systems: (a) Enterprise Resource Planning (ERP) Software, (b) Enterprise Asset Management (EAM) and (c) Workforce Management (WFM). During 2020, IPTO determined the scope jointly with the potential suppliers and business owners, compiled complex technical and operational specifications, coordinated five operational departments of the company and successfully completed the tender procedure.

The successful installation and operation of these systems will contribute to the accomplishment of the strategic objective of IPTO's Management for digital transformation.

More specifically, some of the benefits for the Company are summarised below:

- 1. Modernization of its operating procedures with the introduction of information technologies to meet existing, short-term and medium-term needs.
- 2. Simplification/optimization of the Company's business processes.
- 3. Creation of a single database (single source of truth) to support the main operations of the company, avoiding the dysfunctional, unsafe and costly phenomenon of "Shadow IT".
- 4. Improving the accuracy and completeness of information for managerial and strategic decision-making.
- 5. Guaranteeing the confidentiality, integrity and availability of data (security) for authorized users and business owners.

Successful response to the conditions set by the pandemic

Despite the unprecedented circumstances, the Company remained operationally alive, achieving the following within a short period of time:



1,100 employees







600-700 employees

are connected via e-mail every day







account

800

\_  $\oslash$ 

employees

teleconferences

**Digital signature** 

internal and external

for almost all

documents

(MS Teams, Webex)

can organise

users have an Office 365 license and a cloud

900



200

Handling over 200

were distributed to the employees, along with

400

laptops



requests/day

technical and network support requests per day

headphones & cameras



**5 Digital ICT** Support Groups

> were created (Teleworking, Teleconferencing, IT **Requests & Equipment** Service, Digital Signatures, Collaboration)

Meanwhile, the Electricity Market Applications Plat- This platform also features: form "Market Extranet" (https://market-extranet. admie.gr/home/main) was launched in 2020, which offers safe (through multi-factor authentication) and connection to Target Model systems:

- The new Cross-Border Management System (XBMS) implements the link between the Greek electricity market and neighbouring European day-ahead markets and the European crossborder intraday market, XBID.
- MODESTO, a modern software used to processing and certify energy balance measurements and calculations for the balancing market.
- The Market Settlement System (MSS), a software used for the debit/credit calculation in relation with balancing providers services and contracting parties with balancing responsibility in the new balancing market.







ENERGY NETWORK AND INFRASTRUCTURE

- My Account: Uniform mechanism of access for electricity market systems. It allows a single registration and a single user authentication mechanism for electricity market participants, for all applications.
- API Management: It allows users to download the necessary certificates for submitting requests via webservices.

At the same time, the corporate website was upgraded to provide easy access and navigation through all devices (PC, laptop, tablet, mobile phone), but also to give access to a large amount of information (about 70,000 files of the Market and the Operation), easily manageable from the content menu. Graphs presenting important parameters of the electricity market were also added to emphasise the Operator's extroversion.

Finally, IPTO's objectives for the next year include the following:

- Creation of a system for utilizing the Company's data (Modern Data Analytics Ecosystem) and further development of its digital channels.
- Development of digital actions to access any corporate application from anywhere with the sole requirement of being connected to the internet (Work From Anywhere) and implementation of the Integrated Business Information System in a cloud, providing secure access to Microsoft Office 365 applications from anywhere. The aim of the system is to modernize and upgrade IPTO's Enterprise Resource Planning (ERP), Human Resource Management (HRM),

Enterprise Asset Management (EAM), Workforce Management (WFM) and Project System (PS) management. The implementation of the new system will be based on internationally accredited technologies and solutions and is expected to meet both the needs of IPTO and the Group's subsidiaries.

 Upgrading of digital signature and file handling system.

#### **Cooperation with the European Space Agency**

Within the framework of ENTSO-E's Research, Development & Innovation Committee, it was decided to launch a cooperation between the European Space Agency (ESA) and 10 European Electricity TSOs, including IPTO, in order to design a pilot project that will investigate whether it is possible for ESA satellites to provide monitoring services to the European Transmission Systems. The areas of interest are vegetation management near transmission lines, management of disaster and extreme weather events.

It is worth noting that IPTO's participation in these research projects, requires its active involvement in working groups for the preparation of individual studies and applications, conferences, but also drafting of/contributing to deliverables, as defined by the respective project. Moreover, IPTO participates in pilot projects for demonstrating research applications, such as, the Active Power Flow Controller tests at the Megalopolis Ultra High Voltage Centre, while the application of other innovative technologies (e.g. DLR, WAMAC, 5G, SDN) is currently in progress.

# Transmission System's assets.

#### **Energy storage**

Another dynamic sector being mobilised in our country is energy storage. IPTO plans to actively participate in the transition towards a cleaner energy mix that makes the most of stochastic electricity sources. As the regulatory framework has not yet been formed in Greece, the Operator has already submitted proposals to the Ministry of Environment and Energy, regarding the role it can and should - play.

### **Research & Development and** innovative energy technologies

An important factor for IPTO's development in the new energy reality, is the continuous investment in Research and Development.

Established in 2014, the Department of Research Technology and Development (DRTD) makes IPTO one of the most active TSOs in Europe in research and, as a result, it participates in consortia and a growing number of proposals for European projects.

IPTO participates in European consortia by transferring the necessary know-how and experience it has gained from the aforementioned projects during this transitional period for both the Greek and European Energy System, contributing to the implementation of new methods and technologies. In this context, it has been actively involved for the last 6 years in the preparation of ENTSO-E's Research, Development and Innovation Roadmap (RDI Roadmap) through RDIP and Flexibility & Markets Working Groups, of ENTSO-E's they have to deal with. Research, Development & Innovation Committee (RDIC).

Among IPTO's priorities are the connection of the Company's Research and Development with Universities & Research bodies and the acquisition of further know-how on issues such as flexibility, storage, digitalization and smart management of the Transmission System's assets. Furthermore, IPTO is developing synergies with other Transmission and Distribution System Operators so that Systems can integrate large percentages of RES in the future, in line with the objectives of ENTSO-E and the EU (Green Deal) for decarbonising the EU energy system. To this end, IPTO participates in many research project proposals at national and European level. In 2020, IPTO actively participated in eleven European Research Programmes (Horizon 2020) and collaborated with the European Space Agency (ESA). The results of the research projects are focused on resolving existing business, operational and strategic problems of Transmission System Operators in view of the energy challenges that

However, apart from the cash flows and the knowhow acquired, IPTO contributes significantly to addressing the country's "brain drain", having employed nineteen researchers, who either returned from abroad or never left the country because of the opportunity they were given to work for European-wide, prestigious research projects.

Among IPTO's priorities are the connection of the Company's **Research and Development with Universities & Research bodies** and the acquisition of further know-how on issues such as flexibility, storage, digitalization and smart management of the

At the same time, IPTO is in contact with companies that provide equipment, technology providers and developers, in order to collaborate on large storage projects in Greece, so as to meet the Transmission System's needs for increased capacity.

#### Innovation competition for IPTO employees

In addition to its external collaborations for Research and Technology and the ultimate goal of responding to developments in the energy sector, IPTO has already started to design an innovation competition exclusively for its staff since last year. It involves an intra-entrepreneurship programme called "IPTO Innovation Challenge", aspiring to give all company employees the opportunity to develop innovative ideas that aim to transform the company itself.

Through this initiative, participants are invited to:

- improve an existing process or create a new one
- develop a new product/service or improve an existing one
- develop a new business model

Apart from benefiting the employees in further developing skills they already have, the company also benefits through a faster approach to its digital transformation.

For 2020, the implementation schedule of this programme was as follows:



"IPTO Innovation Challenge" is scheduled to also take place in 2021, thus establishing a permanent motivation mechanism for its employees and an initial step towards the development of open innovative actions. IPTO's ultimate goal is to combine the internal knowledge (and experience) with that of startups and researchers, leading to the participatory development of new processes, products, services and business models, so as to meet the Company's needs.





# Caring for the environment

Environmental protection is one of our top priorities, both for our operation and for our new projects. We take all the necessary measures to reduce our environmental footprint to a bare minimum.



Electric Vehicles

For overhead networks' inspection



Protecting the natural environment is one of IPTO's top priorities. For this reason, we seek to implement practices that ensure the smallest possible footprint from our operation and projects.

Therefore, we comply with existing environmental legislation and licensing regulations, while continuously improving our performance in terms of environmental protection.

Furthermore, we take actions to reduce our energy and carbon footprint, proper management of the waste resulting from our operation as well as the maximum possible protection of nature and biodiversity in the areas where we operate our network and carry out projects.

#### Actions aimed at saving energy in IPTO's two main buildings

In order to increase energy efficiency and save energy, the following interventions for energy upgrading have been planned for IPTO's two main buildings, with expected completion date in 2024:

#### Konstantinoupoleos Avenue Building

- Replacement of heating oil with natural gas for the needs of central heating
- Replacement of lamps with new low-consumption ones
- Replacement/installation of thermal insulation, waterproofing and construction of a green roof
- Upgrade of the existing Building Management System (BMS)

#### Dyracchiou Street Building

- energy consumption
- BMS System Installation
- Replacement/installation of thermal insulation and waterproofing

### **Energy consumption** managememt

Our role as Operator of the Hellenic Electricity Transmission System is intertwined with tackling climate change. In this context, we seek to

continuously reduce energy consumption, where possible, thus decreasing our carbon footprint.

#### Management of energy consumption in buildings

IPTO's goal is to reduce energy consumption of its buildings but also across its operation with a corresponding increase in energy efficiency.

In the context of reducing its emissions, IPTO, in 2021, will measure energy and carbon footprint of its facilities, starting from the two headquarters. Moreover, there is a plan for energy upgrade of the headquarters building envelope.

IPTO's goal is to reduce energy consumption of its buildings but also across its operation with a corresponding increase in energy efficiency.

#### Total electricity consumption in the two main buildings (MWh)



It is worth noting that the increase identified in energy consumption is due to the fact that one of IPTO's headquarters started operating in August 2019, so it was not used from the beginning of the same year until May (renovation works were carried out in the period from May to July).

Total energy consumption of two main building

Natural Gas (MWh)

Electricity consumption (MWh)

Diesel consumption (lt)

· Replacement of three central cooling units with higher energy efficiency ones and lower primary

In 2020, electricity consumption in the two main buildings amounted to 3,176MWh. The increase in energy consumption during 2020 is due to the emergency circumstances of the pandemic and the special measures implemented, in order to protect the health and safety of its employees.

JS	2018	2019	2020
	561	584	664
	1,224	2,343	3,176
	-	5,000	27,091

#### Energy consumption from vehicle fleet and promotion of electric cars

In order to reduce the energy consumption of its corporate fleet, IPTO has replaced older vehicles with new ones that consume and emit less, as well as with electric cars, of almost zero CO2 emissions.

To further promote electric mobility, the company acquired an additional 14 purely electric vehicles in 2020 and installed charging stations in its premises.

This way, IPTO became one of the first companies of the wider public sector to align with the new legislative framework enforced by the Greek Government, which sets a mandatory quota on the supply of clean vehicles from August 2021, together with the provision of infrastructure for charging electric vehicles, from January 2022.

#### Energy consumption by fleet vehicles

	2018		2019		2020	
Fuel type	lt	GJ*	lt	GJ*	lt	GJ*
Petrol (unleaded)	127,200	4,350	143,355	4,903	142,160	4,862
Diesel	609,975	23,545	658,239	25,408	676,452	26,111
LPG	57.00	1.44	170.00	4.30	0.00	0.00
Total	-	27,897	-	30,315	-	30,973

\*\* Conversion factors: petrol 34.2 MJ / lt, diesel 38.6 MJ / lt, LPG 25.3 MJ / lt (https://w.astro.berkeley.edu/~wright/fuel\_energy.html)

#### Energy consumption from electric vehicles (2020)

Year	Total km	Average kW/km	Total kW
2020	32,092	0.141	4,525
2019	45,461	0.141	6,410

#### **Transmission System Losses**

The losses in the Transmission System are due to the conversion of electricity into heat, both due to the electrification of the equipment and due to the distances to which the energy is transferred. As a result of the losses, more electricity needs to be produced than is ultimately used by consumers. Although IPTO constantly aims to reduce losses

as much as possible, in reality, the measures that can be taken towards this direction are limited. The development of the 400kV System in the Peloponnese contributes to the reduction of the Systems's total losses.

The percentage of losses on the net load of the

System over the last five years ranges from 2.37% (2017) to 2.79% (2015). In 2020, the system's losses were 2.54%.

#### Percentage of losses on the net (\*) load (%)



In its effort to reduce load losses, IPTO has installed an automated system since 2011, wh operates continuously and efficiently having

#### Innovative technologies for resources consumption reduction

The company aquired two drones in order perform visual inspections of the interconne Transmission System's overhead high and ul high voltage transmission lines. Such techno aid the Company's digital transformation, p efficient use of resources and reduce costs environmental impacts.

The use of drones allows for quick inspectio and recording findings in various elements the transmission lines, including any vegeta growing around them. Then, findings are ev with appropriate software and our technicia

	benefited from the reduction of energy losses
ich	due to the optimisation of the compensation of
	inductive loads.

to ected Itra- ologies promote and	plan appropriate interventions (fault restorations, pruning, etc.). Temperature measurements (thermovision) is also possible with special cameras mounted on the drones, thus preventing possible future damage.
und	In 2020, 8 technicians received training and a professional UAV (Unmanned Aerial Vehicle) permit.
on of Ition Valuated ans	

### Waste management & circular economy

Operation and maintenance of the System and construction of new projects generate liquid and solid waste which we always manage in accordance with the existing legislation and regulations.

In order to minimise waste generation we give emphasis, where possible, to prevention and reuse by applying the principles of circular economy. We record waste generated and sold in the Electronic Waste Register on an annual basis. The procedure used until now is expected to be modernised in order to create a new waste management policy in collaboration with the Company's Legal and Regulatory issues Department.

The types of waste we manage are divided into two main categories, non-hazardous and hazardous. Non-hazardous waste includes the following:

- Waste metals (steel, copper, aluminium scrap)
- Mixed materials (switches, lightning arresters, cables, conductors, power transformers not containing PCBs, voltage transformers, current transformers, disconnectors, wave traps, connectors, inductors, capacitors not containing PCBs, etc.)

- Fire extinguishers
- Rubber parts
- Packaging materials (tanks, barrels).

Respectively, the hazardous waste that arises during our operation comprises of the following: • Oils

- Batteries (Ni, Cd, Pb), electrolytes
- Materials that may contain PCBs, PCTs

Generally, oils are placed in tanks or barrels, batteries in suitable containers and other waste considered non-hazardous is separated according to raw material or category of disposal. In the case of materials that cannot be sold the recycling process is followed in cooperation with an appropriately licensed operator.

Oils are considered a waste with serious impacts, which is why IPTO apart from leaks control, separates them from other materials.

#### Reuse of oils generates significant economic and environmental benefits

During 2020, IPTO successfully applied the principles of circular economy on insulating oil regeneration., using a system that processes used and degraded insulating oils. In this way, used oils are upgraded in order to recover their properties and be reused.

In the first year of applying this method the regeneration rate reached 90%, while it is expected to reach 98% in the next year. This business practice resulted in a significant reduction of our environmental footprint and our expenditure for new oils.

Additionally, significant quantities of paper and toners are now saved due to IPTO's digitalisation of internal communication, with the ultimate goal of reducing or even eliminating paper

consumption. Some Company Departments are exclusively using digital briefing notes, while this practice will be extended to other Departments in the near future.

### **Biodiversity conservation and** environmental restoration

In recent years our planet experiences a significant decline in biodiversity due to a number of causes, all of which are anthropogenic: environmental pollution, forest destruction, desertification, water pollution and increased hunting, resulting in reduced stability of ecosystems and a lack of substances that may prove valuable in protecting human health.

Although IPTO projects have limited environmental impact, as they do not concern productive activities but "clean" projects, special attention is paid to the protection of the environment and





appropriate management of any environmental impact that may arise. In any case, during the construction phase of projects, works are in compliance with all environmental laws and licensing regulations prerequisites.

Due to the nature of the Company's activity and energy demand, the area occupied by its network is extensive, with transmission lines passing through several protected areas. In particular, they pass through 172 of the 446 Natura 2000 protected areas in Greece.

We constantly monitor developments in the European legal and institutional framework for biodiversity protection and ensure that environmental studies carried out for the Company's projects are fully in line with this framework and always in compliance with Greek legislation. In certain cases, special studies are

carried out (Special Eco-Friendly Utilisation Studies, Ornithological Studies) and in cooperation with the competent authorities (Ministries, Regions, Forestry, Archaeology, etc.) we abide with all the required protocols for biodiversity protection and protected areas.

#### Protecting the environment and biodiversity

IPTO's constant concern is to design, arrange and construct projects with the greatest possible environmental awareness, always taking into account the concerns of local communities.

IPTO's activities that have an impact on biodiversity are mainly related to transmission lines which usually cover long distances (several kilometres) and pass through various ecosystems (protected areas, forests, etc.). Substations, with a few exceptions, are located outside protected areas or areas of high environmental significance, covering a total area of 5,000-10,000 square meters. The measures taken to reduce any visual disturbance include flora restorations, tree plantings or embankments.

IPTO's projects when electrified do not emit air pollutants or generate liquid or solid waste. Therefore there is no effect on the flora of the area or the surface water and groundwater. Moreover, it is estimated that the operation of transmission lines neither changes the composition of vegetation nor alters the overall form of the landscape.

However, the impact on biodiversity is mainly related due to the construction phase of infrastructure and to a minimum extent due to their operation. For this reason, the impact is mainly short-term (lasting as long as the construction period) and the area balance is being fully restored following project completion, either from the regeneration of nature itself or from IPTO's studied interventions which are licensed by the appropriate public bodies. As regards the long-term impact such as noise, electromagnetic radiation and visual/morphological disturbance, IPTO takes mitigation measures which eliminate, prevent or reduce to a negligible level the potential negative impact of a project.

The main impact of projects concerns limited deforestation for the construction of new substations or high voltage centres. As regards fauna, due to increased mobility and noise of equipment, animals in the area leave their habitats and move out of fear, only to return after the end of the construction period. No accidents involving animals have been recorded during the construction phase of the projects.

#### **Environmental protection measures**

The most common measures we take to address the impact on flora and fauna during the construction of projects for transmission lines, substations or high voltage centres car summarised as follows:

- The area of the project's occupancy zone is limited to what is strictly necessary for the construction of the project.
- Any uncontrolled disposal of debris, lubrica and other waste or rubbish is prohibited at areas within the project site.
- Deforestation areas are limited to those stri necessary. For this reason, before the begin of a construction there is precise demarcati of these sites, carried out by a special team surveying engineers.
- · Potential damage to vegetation is limited to the minimum possible extent and always ta place in accordance with the instructions of competent Forest Agency.
- The construction areas are restored based environmental rehabilitation studies.
- During earthworks, dust dispersion is limite by wetting the soil in case of adverse weat conditions.
- During construction and the operation phase employees are informed in detail to ensure all environmental conditions, especially tho relating to the natural environment, are met

IPTO's projects when electrified do not emit air pollutants or generate liquid or solid waste. Therefore there is no effect on the flora of the area or the surface water and groundwater.

-· 11

.

n be	Finally, where necessary, appropriate compensatory measures are implemented, while a monitoring programme is also proposed for all significant environmental parameters in relation to the projects' impact.
S	Within 2021, in order to prevent and eliminate potential threats to the population of Bonelli's Eagle and other birds of prey in the eastern
ants all	Mediterranean from the development of electricity transmission networks, IPTO will sign a memorandum of understanding with the Ministry
ictly nning tion	of Environment and Energy as part of the LIFE Bonelli eastMedproject.
n of	In the context of the same memorandum and despite that there have been no reports so
0	far of incidents involving birds of prey hitting
akes of the	transmission lines, IPTO will explore the possibility of interaction between its network and the population of Bonelli's Eagle in Natura 2000
on a	breeding sides (Special Protection Areas - SPAs). This will be done by using power lines marking in
ed her	the areas of Andros, Evia and Laconia.
	There is no significant negative impact for other
ses,	species of fauna (other than avifauna) during the
that	for the poise of substation transformers, which may
t.	disturb animals and remove them from their nests, therefore balance is restored after construction phase ends.

#### Prevention and management of forest fires

IPTO has fully integrated the environmental aspect both to its maintenance and new constructions, in accordance with the applicable rules of environmental licensing, providing all the necessary guarantees and meeting all the specifications required by the environmental legislation.

Our Company, according to its regulatory obligations and its institutional role to secure electricity transmission infrastructure, carries out works to reduce the thermal load at the bases of the transmission line transmission towers and to ensure that power lines are placed at necessary safety distances from potential dangers; in particular, it carries out works along transmission lines, especially when they pass through forest areas. These works are always carried out in cooperation with the competent forest agency, the local competent forest offices and in full compliance with their recommendations. The main objective is the uninterrupted and safe operation of power lines and their smooth maintenance.

The expenses incurred for the pruning of trees near overhead networks within our remit, as well as for deforestation works in substations and ultra-high voltage centres, are presented in the following table.

Cost of works (€)	2016	2017	2018	2019	2020
Vegetation removal at Substations and High Voltage Centres	136,000	143,500	152,000	195,000	225,000
Cleaning and vegetation removal at the bases of the transmission line towers (transmission towers)	180,000	220,000	195,000	360,500	375,000
Pruning and vegetation removal near overhead high voltage transmission line networks	-	-	-	102,000	115,500
Total	316,000	363,500	347,000	657,500	715,500

#### Total cost of works (€)



As shown by the relevant data, these expenses present an upward trend proving that IPTO pays particular attention to the prevention of forest fires by taking all necessary measures and always in cooperation with the competent authorities. It is worth noting that the planning for the implementation of these works is not related to the maintenance schedule of the Transmission System.

#### **Reforestation after project completion**

After the "Mantoudi-Skiathos" Transmission Line construction, reforestation was implemented at the location "Tourla" of the Municipal Community of the Mantoudi-Limni-Agia Anna Municipality located in the Regional Unit of Evia.

The total reforestable area is 47,500 square metres, for which the forest agency of Limni is responsible. The budget for the project amounted to 54,000 euros and concerned the planting of 4,810 saplings and included construction of a fence.

#### Adoption of stray dogs for guarding facilities

During 2020, IPTO continued the adoption programme for stray dogs living outside substations and Ultra High Voltage Centres. As a result, 24 more dogs were neutered, vaccinated, acquired an electronic identity and are now kept in 24 facilities of the Company, reaching a total of 59.

The company covered all means for this effort by providing shelter, food, vaccinations and medicines for all dogs, while members of the Company's human resources in the specific facilities are responsible for the most essential task: the daily care of the animals.

Now, dogs are considered part of IPTO's workforce and in addition to being a good companion for the handlers-supervisors, they are also excellent guardians of our equipment. They are not allowed to move outside the premises and their presence has helped to eliminate theft, sabotage and reduce damage caused by other animals (e.g. birds, small mammals).

#### Environmental protection in new projects

When implementing projects, our constant concern is to protect the environment as much as possible and to limit any environmental impact to a bare minimum. In this context, IPTO has prepared a Strategic Environmental Impact Assessment for the Ten-Year Development Plan of the Hellenic Electricity Transmission System for the period 2017-2026. The objective of the Strategic Environmental Impact Assessment is to identify, describe and evaluate any significant impacts that the implementation of the development plan proposals may have on the natural environment and propose measures to address these impacts. Furthermore, the Strategic Environmental Assessment (SEA) is applied so that on the basis of a balanced and sustainable development, the environmental aspect is integrated before plans and programmes are adopted by establishing the necessary measures, terms and procedures. Therefore, an evaluation and assessment of the potential impact on the environment is carried out, thus promoting sustainable development and a high level of environmental protection. The design and management process for a new project is presented in the following figure:



#### **01** The need to design a new project

Arises when:

- an area presents increased electricity
- consumption that cannot be covered by the existing infrastructure,
- there is a need to connect with renewable energy utilisation projects;
- there is a need to interconnect the HETS with island complexes to ensure renewable energy sources utilisation and the reduction of Utilities costs,
- there is a need to increase interconnecting lines with foreign countries.



#### **03** Consultation and maturity

Once a project has been thoroughly studied and included in the Ten-Year Development Plan, it subsequently moves to the phase of consultation and final approval by RAE. The project to be approved is accompanied by a budget, financial flows and an implementation schedule. Projects of national importance are also accompanied by cost-benefit studies.



#### **02** Project design

Is carried out by IPTO and is included in the Ten-Year Development Plan. The project can be:

- To enhance the HETS or
- To extend the HETS



#### **04** Project licensing

All necessary steps are followed to obtain the necessary permits and environmental studies for the implementation of the project (receiving updates for studies, task assignment, obtaining all necessary permits, drafting Environmental Impact Studies, file submission, obtaining a Decision for the Approval of Environmental Terms).



#### **05** Project implementation

The implementation of the project is undertaken by IPTO, using its own resources (self-monitoring) or by assignment to third parties (turn key projects). Where applicable, implementation is supervised by IPTO, a third party, or a special purpose vehicle - SPV (see Ariadne Interconnection).



#### **07** Operation and maintenance

Subsequently, the project is then electrified, maintened or repaired in cases of damage or upgraded in cases of infrastructure renewal.

When implementing projects, our constant concern is to protect the environment as much as possible and to limit any environmental impact to a bare minimum.



#### **06** Project completion

The project is electrified upon completion



When the life cycle of the project is completed, it is removed and decommissioned.

### Environmental compliance

IPTO's main concern is that projects are designed, located, constructed and operate always in line with existing environmental legislation. IPTO is carrying out all necessary studies and complys with the relevant environmental terms approved on a case-by-case basis.

In this context, IPTO follows rules and practices in accordance with the precautionary approach principle during preliminary design and planning of new projects, always aiming to environmental protection and biodiversity preservarsion. The design of new energy infrastructure and upgrading - modernisation or modification of existing ones are among the main tasks of the System Operator, while caring for the environment. Final decisions about lines routing and infrastructure locations (substations, terminals, high voltage centres, etc.), always consider minimisation of environmental impact by taking into account all the following criteria:

- mapping areas of concern and preliminary estimation of possible impacts,
- thorough impact assessment is contained in environmental studies of projects
- assessment of the consultation outcomes concerning environmental impact studies,
- full compliance with environmental licensing decisions concerning our projects.

Our continuous efforts to protect the environment are clearly successful. Until now there has not been any adverse impact on the environment and biodiversity, reported by an official management body or institutional agency. In the few cases where additional measures are required during the project construction phase, IPTO executives cooperate and respond in a prompt and effective manner in accordance with the instructions of the competent authorities (e.g. forest agencies). A major concern of the Operator is local communities acceptance of IPTO projects and recognition of their benefits for the regional economic and social development.



Substation at Naxos island, Cyclades

However, despite a series of good practices These objections were expressed when the such as corporate social responsibility actions, project was 95% complete and not during the public consultation during the approval phase of licensing phase, as stipulated by the legislation for environmental projects, participation of locals in entities or citizens who disagree with the design the workforce, taking of necessary and additional of an infrastructure project. It should be noted measures, there have been cases where IPTO that, following the same rationale, the Council of faces complaints, objections or even requests State has rejected -as unfounded- an application for the annulment of the environmental terms for annulment on the grounds of radiation being that have already been granted. It is important present, irrevocably ruling that the project entails to mention that IPTO's implementation of new no harm for human health. energy infrastructure projects, in accordance with the European Union strategy for a climate-As expected, the aforementioned delay is neutral economy, is an obligation for our country, affecting many significant investments concerning as these projects will contribute to promoting Renewable Energy Sources in the region, causing a renewable energy sources in the energy negative impact on the environment as well as on mix and delignitisation. A typical example of the cost of energy for consumers. protest is the case of the Western Corridor of the Peloponnese. The project aims to relieve At the same time, this case shows that large infrastructure projects with significant social and Peloponnese's overloaded energy system and increase the penetration of renewable energy environmental benefits, are at risk of stoppage at any time, even when all the stages of their sources by constructing a new 400kV transmission licensing have been completed. Such a situation line. Expected to be completed during 2021, this line will connect the high voltage centre of entails particularly adverse economic, social and Megalopolis with the high voltage centre of Patras. environmental consequences for the country.

Despite the fact that the Company obtained all the legal licenses (including the environmental terms approval decision of the Ministry of Environment and Energy), it received in November 2020 an application for interim measures by nuns of the Holy Monastery of Aroania in Kalavryta, requesting to stop the construction of the last two ultra high voltage transmission towers.

IPTO's main concern is that projects are designed, located, constructed and operate always in line with existing environmental legislation



## Human resources

We nurture a safe working environment, with respect for diversity and human rights. We provide equal opportunities and support the development of our people through training and development programs.



H&S training

Total training

Employees evaluated in 2020



### **Employment**

At the end of 2020, IPTO had 1.607 employees in total, 100% of which were covered by full-time contracts and a collective labour agreement.

#### Total employees by year



Total employees by gender (31/12/2020)	Men	Women	Total
Permanent staff	973	255	1,228
Temporary staff	251	128	379
Total	1,224	383	1,607
Breakdown of permanent employees by employment contract	2018	2019	2020
Full-time	1,314	1,232	1,228
Part-time	1	0	0
Total	1,315	1,232	1,228
Number of employees on a 24-hour shift	2018	2019	2020
Total	295	285	254

#### **Collective bargaining agreement**

In order to address a series of employment, a collective bargaining agreement between Management and employees has been signed and is being implemented. This agreement

modernised and updated the provisions governing the relationship between the Management and the Company's employees.

#### Staff Regulations

In addition, IPTO has developed and implements staff regulations applicable to all employees, which meet the requirements and perceptions of a modern working environment, while guaranteeing the rights of employees established over the years through collective bargaining.

The Regulation concerns issues such as rights and obligations of employees, recruitment, remuneration, working hours and others, and provides for the following:

#### Additional benefits: Provision of group insurance for employees

Additional insurance is provided for all employees. There is also provision for hospital or outpatient This covers life insurance, insurance of permanent care due to an accident or illness for both total disability due to illness (for people up to 65 employees and their dependants. years old), death insurance, as well as permanent total disability insurance due to accident.

### Occupational **Health and Safety**

#### Our approach

Protecting the Health and Safety of our employees and partners is a top priority for us. In this context, we implement a Health and Safety policy and take all necessary measures to protect the Health and Safety of our employees as well as third parties who collaborate with IPTO or visit our areas of work.

- Securing staff jobs
- Disconnection of salary maturity scales from evaluation
  - Granting of paid leave for employees who are bone marrow donors and employees with children suffering from serious mental illnesses
  - Increase of parental leave by two days
  - Modernisation of the provisions on disciplinary control
  - Inclusion of new recruits in regular staff after seven months, not after two years as previously applicable.

Other benefits offered to IPTO employees are food vouchers, as well as provision for nurseries and summer camps for their protected members.



We also organise Health and Safety training while. in 2020, special care was taken to ensure business continuity and provide maximum protection to our employees against the impact of the COVID-19 pandemic.

#### Health and Safety Policy

With a view to an integrated approach regarding Occupational Health and Safety issues, we implement a Health and Safety Policy approved by the Company's Management, which is binding for all employees for every hierarchy level, as well as for third parties who have an employment relationship with us.

Our Health and Safety Policy defines the objectives, principles and measures implemented to protect Health and Safety, covering all the Company's human resources as well as third parties who cooperate with IPTO or visit our workplaces.

The implementation of this Policy constitutes the framework for the improvement of the Company's performance in the field of Occupational Health and Safety; the purpose of the Policy is to create a strong corporate culture on Health and Safety, in order to identify occupational risks as well as prevent and minimize occupational accidents and diseases.

#### Health and Safety measures, services and programs

One of the basic principles IPTO follows Health and Safety protection, is the adoption of a preventive approach to address work-related risks at their source. In this context, and with a view to identifying and recording health and safety risks, safety specialists and occupational physicians visit work areas, while occupational risk assessment studies are also drafted.

In addition, all employees have access to health care workers, working in nine work areas throughout the country. In particular, the following health services are provided to our employees:

- Staffed clinics in facilities with a large number of employees throughout Greece.
- Occupational physicians at all facilities having employees throughout Greece.
- Occupational medics at facilities with large number of employees throughout Greece, in addition to Occupational doctors dedicated to the coronavirus pandemic.
- Nurses/health Visitors at clinics throughout Greece.
- Medical check-ups for employees and psychological support over the phone in cooperation with a specialised company.

Moreover, a mandatory periodic occupational health check is performed every year for permanent employees engaged in high-risk jobs, and every two years for all remaining employees. Certificates of suitability are then issued to the regular staff, always assuring medical confidentiality and protection of employees personal data.

#### Health and Safety Training

Improved Health and Safety performance requires of personal protective equipment and specific a change of culture. In this context, training occupational hazards and hazardous work or programmes on Health and Safety, proper use dangerous situations are held on an annual basis.

#### Training to create a safety culture for employees

Aiming to create a safety culture in the company, training programs and experiential workshops are held annually on the prevention and management of adverse effects with respect to the Health and Safety of employees.

These seminars aim to help employees develop skills pertinent to personal protective equipment, as well as to the occupational risks they face. The seminars last for a day while participant numbers vary.

Depending on their post, employees are asked to identify the personal protective equipment they use, to share relevant experiences and to report situations and accidents in which they were present or that happened to them.

Due to the pandemic and in order to protect the Health and Safety of employees, not all planned H&S seminars were held, resulting in a lower total number of seminars held in 2020 compared to 2019. This was in part due to the nature of work for the majority of potential participants, as most are engaged in field work.

H&S training	2018	2019	2020				
Seminar title	Occupational Hea	Occupational Health and Safety – Protective equipment					
Seminar series	6	33	13				
Trainees	73	391	151				
Total training hours	550	2,592	942				

minimize occupational accidents and diseases.

### We aim to create a strong corporate culture on Health and Safety, in order to identify occupational risks as well as prevent and

#### Health and Safety performance

Our ultimate goal is zero accidents. The following table shows our Health and Safety performance over the last three years.

W: Women T: Total M: Men

Health and Safety		2018			2019			2020		
Performance Indicators	М	W	т	М	W	т	М	W	т	
Number of deaths due to injury	0	0	0	0	0	0	1	0	1	
Percentage (*1) of deaths due to injury	0	0	0	0	0	0	0.089	0	0.071	
Number of serious injuries (excluding deaths)	1	0	1	0	0	0	0	0	0	
Number of recordable injuries	5	1	6	6	5	11	5	0	5	
Percentage of recordable injuries (*3)	-	-	-	-	-	0.920	0.447	0	0.354	
Total working	-	-	-	-	-	2,390.960	2,238.383	586,627	2,825.010	

#### Number of recordable injuries



(\*1): Percentage of deaths due to serious injury = (Number of deaths due to injury / total working hours)\*200,000 (\*2): Percentage of serious injuries (excluding deaths) = (Number of serious injuries / total working hours)\*200,000 (\*3): Percentage of recordable injuries = (Number of recordable injuries / total working hours)\*200,000 Where serious injuries are injuries with loss of working days of more than 6 months and recordable injuries are injuries of any kind, even if they did not result in lost days, or first

#### **Response to the pandemic:** Supporting our employees and protecting their safety

With the outbreak of the unprecedented COV pandemic, the Company's priority was to ens safety at its workplaces, offices, construction sites and in fieldwork. In this context, IPTO to number of necessary measures for protecting health and safety of its employees, their famil and society at large.

In addition to an immediate switch-over to teleworking for its staff, with emphasis on vulnerable groups, the Company has underta a series of measures to ensure the uninterrupt continuity of its operations.

Indicatively, we summarise below some of the put in place:

- · Availability of antiseptics in all company are and facilities.
- Distribution of personal masks and other personal protective equipment to all the sta and mandatory use indoors (and outdoors required).
- Periodic disinfection of premises and comp vehicles.
- Installation of protective plexiglass panes at specific places and necessary changes in the layout of central buildings and critical infrastructure.
- Availability of doctors for staff at all key faci
- Incorporating special measures for the open of air conditioning units.
- Installation of information signs in the premises.
- Restriction of travel to strictly necessary, following permission from the Company's supervisors.

#### A strong measure against COVID-19 pandemic is the obligatory PCR testing for all employees with physical presence at the Company's premises

VID-19 sure ook a g the	• Holding all meetings through a digital platform as a mandate; limited physical meetings that took place required the permission of the relevant General Manager.
lies	<ul> <li>70% of staff working from home, with only 30% physically present.</li> </ul>
	<ul> <li>Obligatory testing for COVID-19 using the PCR method for staff with physical presence at the Company's premises</li> </ul>
iken ted	<ul> <li>Compulsory temperature check at building entrances for staff and visitors.</li> </ul>
	• Work-from-home regime for crew members throughout Greece, to avoid overcrowding at the
e ruies	<ul> <li>Free molecular COVID-19 tests for employees at a diagnostic centre.</li> </ul>
eas	5
aff	• Employing measures regarding the use of common areas, such as stairs, kitchens, toilets, break areas (including the restaurant) and machinery (e.g. water coolers, photocopiers).
any	At the same time, those doing fieldwork, working in Energy Control Centres, residing away from home, etc. followed specific preventive practices.
ı	Support by medical staff continued this year, while in 2020 we started providing psychological support through a mental health centre, to allow our people to feel safe and remain calm in the face of the difficulties brought about by the pandemic.
ilities. ration	The results of the above measures and practices were prevention of COVID-19 dissemination in our facilities and zero deadly incidents.

#### **Response to the pandemic:** Initiatives to support society

Through a series of initiatives, IPTO contributed substantially to the efforts of society as a whole to deal with the pandemic.

More specifically, at the beginning of 2020, in the midst of the pandemic's outbreak in Greece, IPTO supported the National Health System with donations of equipment totalling €863 million. These were provided to the National Service for Emergency Care (EKAV), the University General Hospital of Heraklion, the General Hospital of Chania "Agios Georgios", the University Hospital of Patras "Panagia i Voitheia" and the Thoracic Diseases General Hospital "Sotiria". The donations concerned personal protective equipment (plain masks and increased protection masks), ventilators, bedside monitors and prefabricated isoboxes for patient screening.

Additionally, in the spring of 2020, the Company's strategic partner, State Grid Corporation of China and IPTO donated 500,000 protective masks and 200,000 N95 masks (type FFP2) to the Ministry of Health, which were flown in from China on a special Aegean Airlines flight. This donation was made at a period when the Greek market was faced with a great shortage of masks, meaning that front-line health staff could not meet their needs.

Furthermore, in an expression of solidarity towards Greek islands, IPTO delivered to the EKAV

three portable negative pressure chambers for transportation of patients with infectious diseases by air or sea, aiming to the maximum protection of the islands and hard-to-reach areas in the midst of the spread of the disease. IPTO procured the special high strength "capsules" from a specialised Norwegian company and delivered them to the EKAV, while also arranging for special training of their crews (by the supplier).

Finally, IPTO made a donation of approximately €20,000 to the microbiological laboratory of the AHEPA University General Hospital of Thessaloniki, a COVID-19 reference hospital, delivering essential tools such as a freezer for sample storage, a chamber for the protection of samples and consumables used for samples classification.

To date, IPTO has donated at total of €1,369,404 to the NHS. True to its commitment to support the fight against the pandemic, IPTO will continue to support the work of public hospitals.

### **Training and development**

Both the nature of the Company's activities and the speed at which radical changes take place in the country's broader energy landscape, raise the bar for our human resources even higher. In this context, we constantly invest in our people, designing and implementing training programs on various topics.

We design and implement the most appropriate training programs for employees, allowing our staff to strengthen their technological and organisational knowledge, develop their creative thinking and test their skills in innovative programs.

#### Total hours of employee training per year





Training hours per thematic area, 2020



Periodic disinfection of premises

The implementation of our training programs is an important component for achieving the necessary competitiveness and implementing the Company's business strategy.

The Company organises staff training on an annual basis, with employees participating in seminars and educational events, as well as postgraduate and post-secondary programs, while emphasising new innovative practices (experiential and distance learning), enhancing the quality and quantity of training and development programs.

Training is provided to all employees who wish to improve their knowledge of technical and financial subjects, as well as their soft skills.

The Company's training needs are identified through either, or a combination, of the following two ways:

- by compiling a list of training needs on specialised topics from all Company Divisions,
- by conducting a questionnaire survey, where all employees can participate. After processing the survey results, an annual training plan is designed

and prepared for the Company's employees. This is implemented based on the priority of the needs as they arise.

In 2020, a total of 3,981 hours of training took place during 91 seminars, that were attended by 873 participants. More information on the topics and the hours spent are presented in the following tables: Average of training hours per employee



#### Total employees by category



#### M: Men W: Women T: Total

Average of	2018			2019			2020		
training hours	М	W	т	М	W	т	М	W	т
Directors of Departments & Divisions	7.6	8.6	7.9	25.9	26.1	26.0	5.6	8.6	6.3
Heads of Departments, Deputy Heads of Departments	8.8	8.4	8.7	19.4	16.2	18.2	10.1	8.0	9.3
Employees	2.7	8.1	3.6	4.7	7.8	5.2	1.9	3.1	2.1
Total	3.4	8.2	4.3	6.9	10.7	7.7	2.9	4.6	3.2

Total employees	2018			2019			2020		
by category	М	W	т	М	W	Т	М	W	т
Directors of Departments & Divisions	32	11	43	32	11	43	35	11	46
Heads of Departments, Deputy Heads of Departments	105	57	162	103	62	165	105	66	171
Employees	926	184	1,110	848	176	1,024	833	178	1,011
Total	1,063	252	1,315	983	249	1,232	973	255	1,228

In 2020, we spent 48,644 euros on employee training and development.

8.2				
		10.7		

1,063	252
1,315	
983	249
1,232	
73	255
1,228	

🔵 Total

### **Equal opportunities and** performance evaluation

We seek to create a working environment of equal opportunities for all, with respect to diversity and human rights. IPTO remains committed to the support and implementation of human rights and opposes all forms of discrimination. All employees are treated equally, based solely on performance at work. Within this framework, employees undergo an annual performance evaluation.

Despite our policy for equality and nondiscrimination, the overall rate of female employees remains lower than that of men. This is mainly due to the nature of the Company's operations and the relatively lesser interest of the women it attracts.

The representation of women in positions of responsibility over the last 3 years stands on average at 30% of the total number of the Group's Directors, while, in 2020, this percentage is 35,5% for all kind of responsible positions.

Men to women ratio (2020)



Men to women ratio at responsible positions



#### **Employee evaluation**

Since 2020, IPTO has been implementing a n modernised electronic evaluation system, th Performance Management System (PMS), wh replaced the previous outdated paper-based uation procedure.

The new innovative PMS is based on qualitat quantitative criteria; it includes self-assessme each employee, providing a forum for all invo parties, evaluated and evaluators alike, to as

#### Number of employees undergoing performance evaluation by category and gender

Employee		2018			2019			2020	
category and gender	М	W	т	М	W	т	М	W	т
Directors, Managers	32	11	43	32	11	43	35	11	46
Heads of Departments, Deputy Heads of Departments	105	57	162	103	62	165	105	66	171
Employees	926	184	1,110	848	176	1,024	833	178	1,011
Total	1,063	252	1,315	983	249	1,232	973	255	1,228



Over the last three years, all (100%) of IPTO's permanent

ew	their performance, to agree or disagree with the
e	assessment and to gain a better understanding
ich	of their role in the achievement of the Company's
I eval-	strategic goals, through feedback meetings.
ve and ents for blved sess	At the same time, the PMS allows to diagnose ad- vantages and disadvantages of Human Resources, aiming to develop and improve the staff skills and know-how, with the ultimate aim being to increase the Company's efficiency for everybody's benefit.

### employees were evaluated based on the new evaluation system.



# About the Report

### **Report methodology**

This Report is the second Sustainability Report of the IPTO Group and covers the Group's activities for the period 1/1/2020-31/12/2020. Through this Report, IPTO aims at disclosing both the company's sustainability performance and the way through which it effectively contributes to the implementation of the national policy for the transition to a low-carbon economy.

The Report complies with the highest sustainability disclosure standards, as it has been developed in accordance with the GRI Standards, while selected performance indicators of SASB Standards are also covered for the first time.

#### **ESG** reference standards

This Report has been developed in accordance with the requirements of the GRI Standards: "Core option". In addition, other reporting standards, such as SASB Standards and TCFD recommendations. have been taken into account in the development of the Report.

#### Coordination and project team

A special team of executives was formed to prepare the Report, under the coordination of the Administration Office. The primary task of the Corporate Responsibility and Sustainable Development team was to collect the necessary information regarding IPTO's areas of Corporate Responsibility and Sustainable Development. Special thanks to all the participants in the development of the second IPTO Sustainability Report, who are:

Coordination: Irini Tsevi

• Contribution of data and content: Aggeletou Vasso, Aivalioti Tota, Antonopoulos Giorgos, Aretha Stella, Vassiou Aikaterini, Georgila Katerina, Zafeiropoulos Elias, Theopoulou Giannoula, Kamilaki Marina, Karamitsou Maria, Karastamatis Stamatis, Katemiliadis Savvas, Koukounias Dimitris, Lyberi Orianna, Lybertas Vasilis, Mantzouki Marina, Martinou Dimitra, Mesitou Despina, Moustakas Dimitris, Bada Katerina, Basakarou Antigoni, Bistaraki Stella, Nikolakopoulou Efi, Dotas Konstantinos, Palamiti Nelli, Papaioannou Giorgos, Paraskevas Michalis, Panagopoulos Filippos, Ratopoulos Nikos, Roussaki Victoria, Sakellarios Efklidis, Sia Maria, Souflis Sotiris, Stefanakou Evgenia, Tarousinov Giorgos, Tzoiti Eleni, Trikalitis Dimitris, Tsemperlidis Stefanos, Fassianou Vivi.

#### **External verification**

We recognise the added value of external assurance of disclosures and performance indicators (KPIs) contained in our reports and believe that this process enhances the quality and accuracy of our Company's accountability, transparency and reliability. For this reason, the Report has been audited by an external assurance body.

At the same time, the assurance of data is provided in additional ways, as independent auditors provide external validation and assurance for the Company's financial data.

#### Support

This Report was prepared with the support of AIPHORIA Consulting.

#### Printing

**KETHEA Schema & Chroma** 

#### Design

The Birthdays Design

#### Contact point

We will be happy to talk with you about any sustainable development issues related to our operation. If you have any questions, do not hesitate to contact us.

Address: 1, Konstantinoupoleos Ave., 12132, Peristeri, Attica Tel.: 210-9466974 Email: sustainability@admie.gr Website: www.admie.gr

### **GRI Content Index**

#### GRI 102: General Standard Disclosures (2016)

GRI Standard number	Description	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
Organiz	ational Profile				
102-1	Name of the organization		Independent Power Transmission Operator (IPTO), Page 12		
102-2	Activities, brands, products, and/ or services		Pages 8-9, 12-13		
102-3	Location of headquarters		Page 15		
102-4	Location of operations		Pages 8, 12-13		
102-5	Ownership and legal form	6710	Pages 15, 17		
102-6	Markets served	6.4.1-	Pages 12-13, 16-17, 62-63		
102-7	Scale of the organization	6.4.2, 6.4.3,	Pages 9, 12-13, 42, 96		
102-8	Information on employees and other workers	6.4.4, 6.4.5, 6.8.5,	Pages 9, 96		
102-9	Supply chain	7.8	Page 45		
102-10	Significant changes to the organization and its supply chain		There were no significant changes in the supply chain and shareholder structure.	1	
102-11	Precautionary Principle or approach		Pages 84, 87, 86-91, 92		
102-12	External initiatives		Pages 28-30		
102-13	Membership of associations		Pages 40		

#### GRI 102: General Standard Disclosures (2016)

Strateg	ах		
102-14	Statement from senior decision- maker	4.7,	Pages 6, 7
102–15	2-15 Key impacts, risks, and opportunities		Pages 6-7, 12, 18-19, 26-27, 32, 38, 42-43, 44, 48-49, 50-53, 56- 57, 58-61, 62-64, 66-67, 74-75
Ethics	and Integrity		
102–16	Values, principles, standards, and norms of behavior	4.4, 6.6.3	Page 14
Govern	nance		
102–18	Governance structure		Pages 21–23
102-20	Executive-level responsibility for economic, environmental, and social topics		Page 23
102–21	Consulting stakeholders on economic, environmental, and social topics		Pages 33–36 Consultation with stakeholders is not outsourced to a third party, but is carried out directly between IPTO and its stakeholders with the participation of the Company's Chairman and CEO.
102-22	Composition of the highest governance body and its committees		Page 22
102-23	Chair of the highest governance body	6.2, 7.4.3, 7.7.5	Page 22
102-26	Role of highest governance body in setting purpose, values, and strategy		Page 23
102-29	Identifying and managing economic, environmental, and social impacts		Pages 23, 31, 33–34 The Report and the material issues are reviewed and approved by the Top Management, as well as the Chairman and CEO.
102-32	Highest governance body's role in sustainability reporting		Pages 23, 31 The Report and the material issues are reviewed and approved by the Top Management, the Chairman and the CEO.

GRI Standard number	Description	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
Stakeho	lder engagement				
102-40	List of stakeholder groups	5.3	Page 33		
102–41	Collective bargaining agreements	-6.3.10, 6.4.1 6.4.2, 6.4.3, 6.4.4, 6.4.5, 6.8.5, 7.8	Page 96		
102-42	Identifying and selecting stakeholders		Page 33		
102-43	Approach to stakeholder engagement	5.3	Pages 33-36, 39		
102-44	Key topics and concerns raised		Pages 34–36, 39		
Reportir	ng practice				
102-45	Entities included in the consolidated financial statements	5.2,	Pages 15–17 Annual Financial Report 2020 – Annual Management Report of Board of Directors, Pages 5, 64–65, 100		
102-46	Defining report content and topic Boundaries	- 7.3.2, 7.3.3, 7.3.4	Pages 31-32		
102-47	List of material topics		Pages 31-32		
102-48	Restatements of information		There are no reinstatements of information		
102-49	Changes in reporting		There are no significant changes in relation to previous reports		
102-50	Reporting period		1/1/2020-31/12/2020		
102-51	Date of most recent report		2019		
102-52	Reporting cycle		Annual		
102-53	Contact point for questions regarding the report	7.6.2	Page 110		
102-54	Claims of reporting in accordance with the GRI Standards		Page 110		
102-55	GRI content index	-	Pages 112-120		
102-56	External assurance	_	Pages 122-124		

#### **GRI 200: Economic disclosures**

	GRI Standard number	Disclosure	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
	GRI 201 -	- Economic performance (2016)				
GRI 103: lanagement approach (2016)	103–1	Explanation of the material topic and its Boundary	6, 731	Pages 31-32, 42-43		
	103-2	The management approach and its components	7.4.3, 7.7.3,	Pages 6-7, 42-43		
Σ	103-3	Evaluation of the management approach	7.7.5	Pages 6-7, 23, 31, 32, 42-43		
GRI 201: Economic performance (2016)	201-1	Direct economic value generated and distributed	6.8.1- 6.8.2, 6.8.3, 6.8.7, 6.8.9	Pages 42-43		
	201-2	Financial implications and other risks and opportunities due to climate change	6.5.5	Pages 44		
	GRI 203	- Indirect economic impacts (201	6)			
ent C	103-1	Explanation of the material topic and its Boundary	6, 731	Pages 31–32		
GRI 103: anagem€ approach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 31–32, 48–50, 50–57, 58–61 64–65, 67–74, 75–76, 86–87	r	
Σ	103–3	Evaluation of the management approach	7.7.5	Pages 6-7, 23		
ic	203-1	Infrastructure investments and services supported	6.3.9, 6.8.1- 6.8.2, 6.8.7, 6.8.9	Pages 6-7, 37-39, 50-58, 58-61, 62-63, 64, 65, 67-75, 88-89		
GRI 203: Indirect economic impacts (2016)	203-2	Significant indirect economic impacts	6.3.9, 6.6.6, 6.6.7, 6.7.8, 6.8.1- 6.8.2, 6.8.5, 6.8.5, 6.8.7, 6.8.9	Pages 6-7, 37–38, 5058, 58–64		

	GRI Standard number	Disclosure	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
	GRI 204	- Procurement practices (2016)				
t	103–1	Explanation of the material topic and its Boundary	6,	Pages 31-32, 45		
GRI 103: Managemer approach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Page 45		
	103-3	Evaluation of the management approach	7.7.5	Pages 23, 45		
GRI 204: Procurement practices (2016)	204-1	Proportion of spending on local suppliers	6.4.3, 6.6.6, 6.8.1- 6.8.2, 6.8.7	Page 45		

#### **GRI 300: Environmental disclosures**

	GRI 30	2 – Energy (2016)			
GRI 103: Management approach	103–1	Explanation of the material topic and its Boundary	6,	Σελ. 6-7, 31-32, 79-83, 90-9	91
	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Σελ. 6-7, 80-83, 90-91	
	103-3	Evaluation of the management approach	7.7.5	Σελ. 23, 80-83, 90-91	
GRI 302: Ενέργεια (2016)	302-1	Energy consumption within the organization	6.5.4	Σελ. 80-81	Μη επαρκή δεδομένα – Η Εταιρεία σκοπεύει στη συλλογή των σχετικών στοιχείων και τη δημοσιοποίησή τους σε επόμενο κύκλο.
	302-2	Energy consumed outside of the organization		Σελ. 80-82	
	302-3	Energy intensity		Σελ. 82-83	

	GRI Standard number	Disclosure	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
	GRI 304	- Biodiversity (2016)				
int c	103–1	Explanation of the material topic and its Boundary	6,	Pages 31-32		
GRI 103: anageme approach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 85-91		
Σ	103-3	Evaluation of the management approach	7.7.5	Pages 23, 85-91		
rRI 304: diversity (2016)	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	6.5.6	Pages 85–91	Insufficient data - The Company intends to collect the relevant data and disclose them in the following cycle.	
B. O	304-2	Significant impacts of activities, products, and services on biodiversity		Pages 85-91		
	304-3	Habitats protected or restored	-	Pages 85-91		
	GRI 305	- Emissions (2016)				
t	103-1	Explanation of the material topic and its Boundary	6,	Pages 31-32		
GRI 103: inageme ipproach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 79-83		
Σ	103-3	Evaluation of the management approach	7.7.5	Page 23		
GRI 305: Emissions (2016)	305-1	Direct (Scope 1) GHG emissions	6.5.5	Pages 81–82	Insufficient data - The Company intends to collect the relevant data and disclose them in the following cycle.	
	305-2	Energy indirect (Scope 2) GHG emissions		Pages 80-82		

	GRI Standard number	Disclosure	ISO 26000	Page number / reference / note	Reasons for omission / non compliance	External assurance
	GRI 306	- Waste (2020)				
nt	103–1	Explanation of the material topic and its Boundary	6,	Pages 31-32		
GRI 103: inageme ipproach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Page 84		
a a Z	103-3	Evaluation of the management approach	7.7.5	Pages 23, 84		
GRI 306: Waste (2020)	306-1	Waste generation and significant waste-related impacts	6.5.3, 6.5.4 6.5.3	Page 84	Insufficient data - The Company intends to collect the relevant data and disclose them in the following cycle.	
	306-2	Management of significant waste- related impacts		Pages 84-85		
	GRI 307	- Environmental Compliance (201	6)			
GRI 103: Management approach (2016) L - L	103–1	Explanation of the material topic and its Boundary	6,	Pages 31-32		
	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 92-93		

	103-3	Evaluation of the management approach	7.7.5	Page 23
GRI 307: Environmental Compliance (2016)	307-1	Non-compliance with environmental laws and regulations	4.6	Pages 92-93

#### GRI 400: Social performance disclosures

	GRI 403 – Health & Safety (2018)					
n t	103–1	Explanation of the material topic and its Boundary	6,	Pages 31–32, 97–98		
GRI 103: anageme approach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 97–99, 101–102		
Σ	103-3	Evaluation of the management approach	7.7.5	Pages 23, 97–98		
13: Safety )	403-3	Occupational health services	th & Safety (2018)nation of the material topic is Boundary6,nanagement approach and mponents7.3.1,Ation of the management ach7.7.3,ation of the management ach6.4.4,bational health services6.4.4,er training on occupational n and safety6.4.8,botion of worker health rrelated injuries6.4.3,ing & education (2016)6,nation of the material topic is Boundary6,nanagement approach and mponents7.3.1,Ation of the material topic s Boundary6,ation of the management approach and mponents7.7.5ation of the management ach6.4.7ge hours of training per year manage of employees and transition assistance ams6.4.7, 6.8.5atage of employees ring regular performance areer development reviews6.4.7	Page 98		
GRI 4C ealth and (2018	403-5	Worker training on occupational health and safety		Page 99		
I	403-6	Promotion of worker health		Pages 97-98, 101		
	403-9	Work-related injuries		Page 100		
	GRI 404 - Training & education (2016)					
ent C	103-1	Explanation of the material topic and its Boundary	6,	Pages 31–32, 103–104, 107		
GRI 103: anagem∉ approach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 83, 99, 103–105, 107		
Σ	103-3	Evaluation of the management approach	7.7.5	Page 23		
	404-1	Average hours of training per year per employee	6.4.7	Page 105		
GRI 404: raining & ducation (2016)	404-2	Programs for upgrading employee skills and transition assistance programs	6.4.7, 6.8.5	Pages 103-104		
- ⊢ 0	404-3	Percentage of employees receiving regular performance and career development reviews	6.4.7	Page 107		

#### GRI 405 - Diversity and equal opportunities (2016)

ut	103–1	Explanation of the material topic and its Boundary	6,	Pages 31-32, 106-107
GRI 103: Inageme Ipproach (2016)	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 106–107
Σ	103-3	Evaluation of the management approach	7.7.5	Pages 23, 106–107
GRI 405: Diversity and equal opportunities (2016)	405-1	Diversity of governance bodies and employees	6.2.3,	Pages 22, 107
	405-2	Ratio of basic salary and remuneration of women to men	6.3./, 6.3.10, 6.4.3	Page 107 Salaries and other benefits do not differ according to gender.
	GRI 413	- Local communities (2016)		
GRI 103: Management approach (2016)	103–1	Explanation of the material topic and its Boundary	6,	Pages 31–32, 34–35
	103-2	The management approach and its components	7.3.1, 7.4.3, 7.7.3,	Pages 34-35, 37-39, 92-93
	103-3	Evaluation of the management	7.7.5	Page 93

#### 103–3 Page 23 approach Operations with local 6.3.9, (2016) community engagement, impact 6.5.1-413-1 assessments, and development 6.5.3, 52, 56-57, 90-91 programs 6.8

Pages 31-32, 34-35, 37-39, 51-

### **Sustainability Accounting Standards Board** (SASB) Standards

IPTO aims to continuous improvement of disclosure on performance impacts and sustainability issues. In this context and on a voluntary basis, the following table presents the most relevant performance indicators of SASB Standards related to the Company's activity. The data presented refer to the Company's performance on an annual basis, as recorded at the end of 2020.

SASB Standards Table Infrastructure – Electric Utilities & Power Generators										
Disclosure Topic	Accounting Metrics / Activity Metric – SASB Code	Accounting Metrics – Description	Reference	External assurance						
Accounting Metrics										
Dimension: Leadership & Governance										
Category: Systemic Risk Management										
	IF-EU-550a.1	Number of incidents of non- compliance with physical and/ or cybersecurity standards or regulations	Page 70							
Grid Resiliency	IF-EU-550a.2	(1) System Average Interruption Duration Index (SAIDI),	(1) 0,19 out./y							
		(2) System Average Interruption Frequency Index (SAIFI)	(2) 22,03 min/y							
Activity Metric										
Activity Metric Description	ity Metric Length of transm ription IF-EU-000.C distribution line		Pages 9, 12-13							

### External assurance

EURO CERT EUROPEAN INSPECTION AND CERTIFICATION COMPANY S.A. 89 CHLOIS & LYKOVRISEOS, 144 52 METAMORFOSI, ATHENS, GREECE TEL. +30 210 6252495, 6252495 INTERNET SITE: www.eurocert.gr e-mail: info@eurocert.gr FAX: 210 6203018

#### EUROCERT

#### **External Assurance Statement for IPTO** Sustainability Report 2020 (No. KZ/65031)

#### Information on the Assurance Statement

The Assurance Provider EUROCERT has been engaged to provide external assurance on the disclosures published in the Sustainability Report 2020 ('the Report') of IPTO Group of Companies | Independent Power Transmission Operator Group of Companies ('the Company'). The Company is exclusively responsible for the data and information within the Report. The assurance process was conducted by EUROCERT in terms of sample-based audits of data and information, as well as audits of data collection systems and procedures.

Economic and financial data were not verified. Instead, they were assessed with respect to the information contained in the 2020 annual financial statement which has been verified by other third parties.

The intended users of this Statement are all the stakeholder of the Company.

#### Scope of Assurance

EUROCERT undertook and implemented the following guality assurance activities during September and October of 2021:

- 1. Review of the Report against the requirements of Global Reporting Initiative (GRI) Sustainability Reporting Guidelines, to confirm that the GRI-STANDARDS "Core option" requirements are fulfilled
- 2. Evaluation and verification of the IF-EU-420a.1, IF-EU-550a.1 and F-EU-550a.2 Accounting Metrics and the Activity Metric IF-EU-000.C of SASB Sustainability Standards Framework.
- 3. Verification of the data included in all the chapters of the Report.
- 4. Use of remote audits technics, including interviews with the Sustainability Team and the main executives of the Company, and sampling inspections of files, in order to evaluate:
  - the reliability and accuracy of performance indicators of the Sustainability Report
  - the processes for generating, gathering, and managing information included in the Report
  - the adherence to the principles of inclusivity, materiality, and responsiveness to stakeholders.

ΔΠ13.51/E06/18-11-2020

1/3 | Page



#### EUROPEAN INSPECTION AND CERTIFICATION COMPANY S.A.

89 CHLOIS & LYKOVRISEOS, 144 52 METAMORFOSI, ATHENS, GREECE TEL. +30 210 6252495, 6252495 INTERNET SITE: www.eurocert.gr e-mail: info@eurocert.gr FAX: 210 6203018

#### Limitations

The extent of the evidence, data and information collected justifies the characterization of a "limited level of assurance", as:

- contacting external stakeholders.
- interviews and documentation examination.

#### Conclusions

As a result of the application of the external assurance process, it was confirmed with "limited level of assurance" that the data and information of all the chapters of the Report are accurate and reliable. The accuracy of the disclosed statements and assertions was found to be within acceptable limits. The Company provided a comprehensive and proper presentation of performance based on reasonably documented information as well as that there is an effective data gathering, management and reporting system in place for issues which pertain to sustainable development.

Furthermore, it is confirmed that the statements of the Company related to the IF-EU-420a.1, IF-EU-550a.1 and F-EU-550a.2 Accounting Metrics and the Activity Metric IF-EU-000.C of SASB Sustainability Standards Framework are accurate and reliable.

EUROCERT concurs that the GRI-STANDARDS "Core option" requirements have been met.

#### **Opportunities for Improvement**

Based on the observations and concluding remarks derived from the assurance engagement, EUROCERT's recommendations for the improvement of the Company's future Sustainability Reports are as follows:

Provision of information for additional GRI-STANDARDS performance indicators, in order to fulfill the "Comprehensive option" requirements.

#### Statement of Independence, Impartiality and Competence

EUROCERT is an independent professional services company that specializes in quality, environmental, health, safety and social accountability. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems and processes for the environment, society, ethics, health & safety at work and sustainable development.

ΔΠ13.51/E06/18-11-2020

a) The objective evidence collected via internal sources of the Company and not via

b) The verification of the information took place by using remote auditing technics, including



#### EUROPEAN INSPECTION AND CERTIFICATION COMPANY S.A. 89 CHLOIS & LYKOVRISEOS, 144 52 METAMORFOSI, ATHENS, GREECE TEL. +30 210 6252495, 6252495 INTERNET SITE: www.eurocert.gr e-mail: info@eurocert.gr FAX: 210 6203018

EUROCERT is an accredited certification body which operates a Quality Management System which complies with the requirements of several accreditation standards, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

EUROCERT has implemented a Declaration of Impartiality and Independency and several relevant procedures which ensure that all employees, that work for or on behalf of it, maintain high standards in their day-to-day business activities. We are particularly cautious in the prevention of conflicts of interest. Our assurance team does not have any involvement in other projects with the Company that would cause a conflict of interest and has never provided any consulting services to the Company.

Note: This Independent Assurance Statement has been prepared as a translation of the original Greek version.

On behalf of EUROCERT, Athens, 2<sup>nd</sup> of November 2021



Georgios Briskolas

Nikolaos Sifakis Lead Auditor

ΔΠ13.51/E06/18-11-2020

3/3 | Page

