



MINISTRY OF
ENVIRONMENT
& ENERGY



Bonn, June 15th, 2021

UNFCCC Multilateral Assessment GREECE

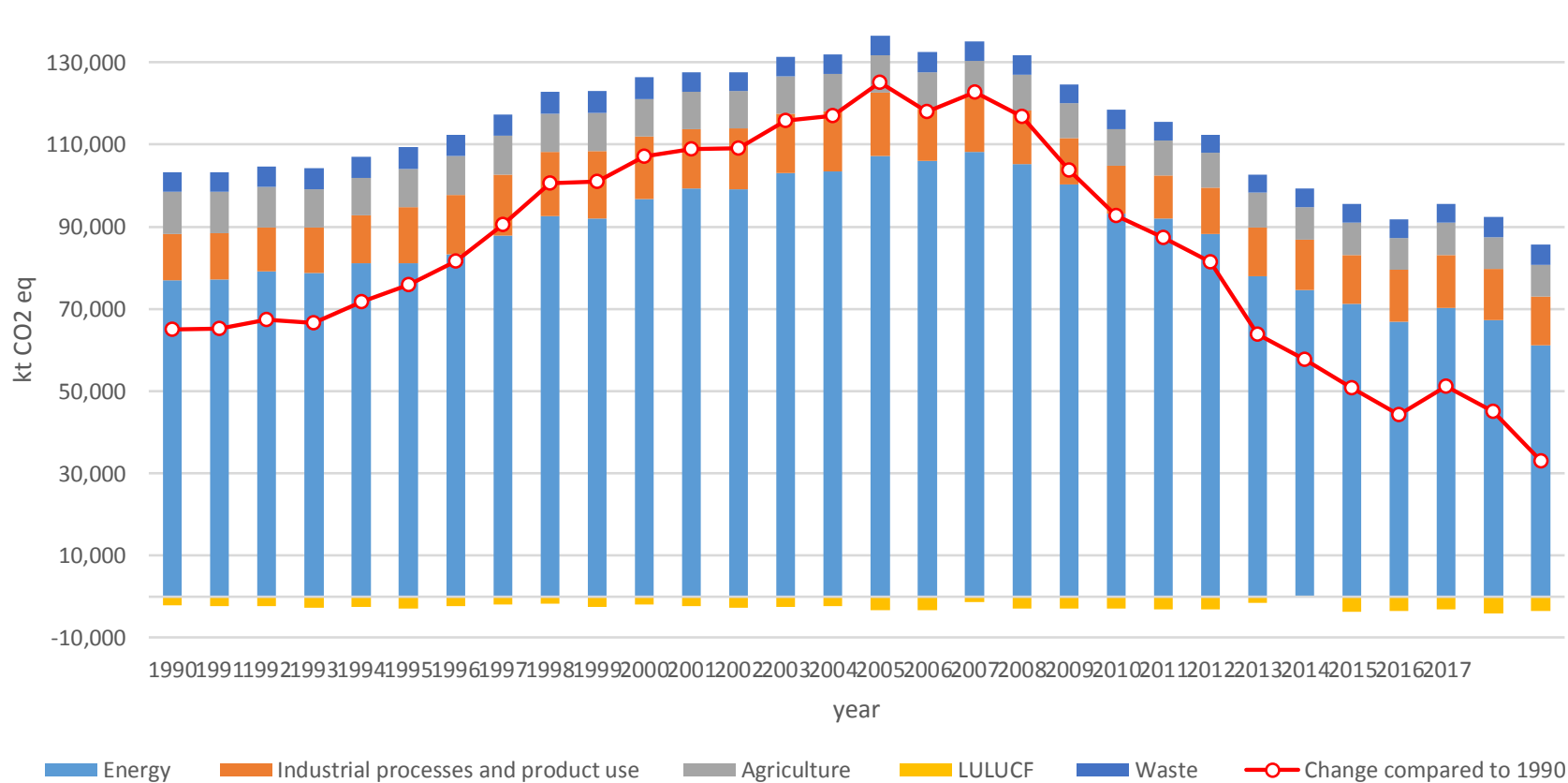
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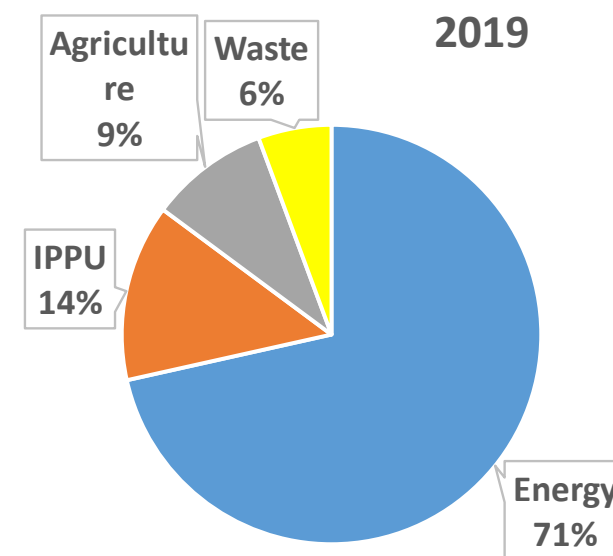
GREECE - basic national data :

- ✓ **Geography:** 131,957 km², consisting of two main geographic areas:
 - a peninsular mainland, and
 - approx. 6,000 islands & islets
- ✓ **Coastline:** 16,300 km
- ✓ **Climate:** mild, wet winter and hot, dry summer
- ✓ **Population:** 10,718,565 (2020)
- ✓ **GDP:** €165,830 mil (2020)
 - 15,471 euros/capita (2020)
 - 29.8% (2020/2007)
 - +4.6% (2019/2013)
 - 8.25% (2020/2019) (covid-19)

GHG emissions profile



- ✓ GHG emissions (2019):
85,631 ktCO₂eq or
7.98 tCO₂eq/capita
- ✓ -37.23% (2019/2005)
- ✓ -17.10% (2019/1990)





2020 GHG emission mitigation commitments



- ✓ Pledge under the Convention for EU and its Member States (Quantified economy-wide emission reduction target, QEERT):
 - Unconditional quantified economy wide emission reduction target of 20% by 2020, compared to 1990 levels

- ✓ Binding commitment under Kyoto Protocol (implementing CP2 since 1.01.2013):
 - CP2: joint commitment of the EU, its MS and Iceland to reduce average annual emissions during 2013-2020 by 20% compared to base year

- ✓ EU internal target: 2020 Climate and Energy Package



EU 2020 pledged target under the UNFCCC

- The EU and its Member States are committed to an independent quantified economy-wide emissions reduction target of 20 per cent emission reduction by 2020, compared to 1990 levels.
- The 20% target is based on the understanding that it will be fulfilled jointly with the European Union.
- LULUCF is excluded from the target.
- The target is based on GWPs of IPCC AR4.
- The target is implemented through binding EU legislation and is mainly based on the EU's "Climate and Energy Package",
 - ✓ For the emissions covered by the EU ETS, under an EU-wide cap, the goal is to reduce emissions of greenhouse gases by 21% in 2020 compared to 2005 levels
 - ✓ For the emissions of GHG not covered by the EU ETS, the goal is a collective reduction of 10% in 2020 compared to 2005 levels.



Climate and Energy Package

2020 Greek Targets

- ✓ For the sectors of Industry & Power, under Directive 2003/87/EC (EU-ETS) there is a **single EU-wide cap**. For non-ETS sectors (ESD), i.e. Agriculture, Transport, Buildings, Waste etc., the target is **4% reduction of 2005 emissions by 2020**
- ✓ RES: 18% of final energy consumption mandatory until 2020 (Directive 2009/28/EC). **The national target was increased from 18% to 20%** by Law 3851/2010
- ✓ Primary energy saving of 20% until 2020: The EU has set itself a 20% energy savings target by 2020 when compared to the projected use of energy in 2020 through Directive 2012/27/EU. **The national target of Greece for 2020 is 18.4 Mtoe final energy consumption (24.7 Primary energy consumption)**



2nd CP (2013-2020) KP target

- ✓ Under the Kyoto Protocol the EU and its MSs in Doha adopted a QELRC (Quantified emission limitation or reduction commitment) of **20% reduction from base year for the period 2013-2020** (Greece ratified the DA on 17th Nov 2015).
- ✓ LULUCF activities under Articles 3.3 and 3.4 (Forest Management) will be accounted during 2nd CP by Greece.



2030 climate & energy framework

- ✓ NDC communicated under the Paris Agreement (GR ratified PA : 7th Oct. 2016)
- ✓ An update of the NDC was submitted in 2020. The EU and its Member States are committed to a binding target of Economy-wide net domestic reduction of **at least 55% in greenhouse gas emissions by 2030** compared to 1990



European Green Deal

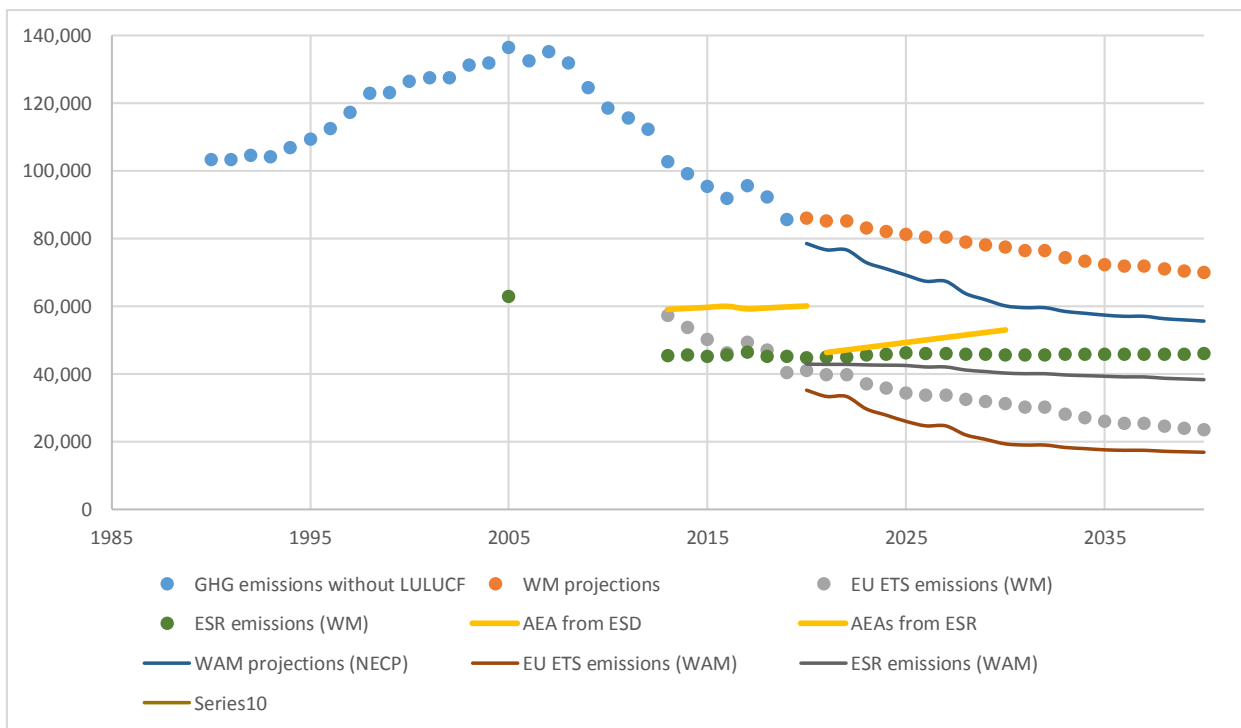
Climate action is at the heart of the European Green Deal:

- European Climate Law to ensure the 2050 climate-neutrality objective into EU law (in the process - at the moment, agreed text)
- European Climate Pact to engage citizens and all parts of society in climate action
- 2030 Climate Target Plan to further reduce net greenhouse gas emissions **by at least 55% by 2030 vs 1990**
- New EU Strategy on Climate Adaptation to make Europe a climate-resilient society by 2050, fully adapted to the unavoidable impacts of climate change
- Other relative strategies (i.e. “From Farm to Fork” etc)

Key climate related data of Greece

- ✓ Total estimated mitigation effect of implemented and adopted policies was approx. **25.6 MtCO₂ eq in 2015** and is projected to be **36.8 Mt CO₂ eq in 2025** and over 55.0 Mt for 2030
- ✓ Total CO₂ intensity of GDP: **-33.0%** in 2019 compared to 2000
- ✓ Total CO₂ intensity per capita: **-35.8%** in 2019 compared to 2005
- ✓ Energy related CO₂ intensity of GDP: **-37.2%** in 2019 compared to 2000
- ✓ Carbon intensity of total power generation: **-48.4%** in 2019 compared to 1990
- ✓ Energy related CO₂ intensity of industry: **-28.7%** in 2019 compared to 2000
- ✓ Specific CO₂ intensity of households: **-49.8%** in 2019 compared to 2000
- ✓ For 2020, further reduction is expected: **ETS emissions -27.6% (2020/2019)**
- ✓ **Power sector -28.7% (2020/2019) although electricity use -4.1% (2020/2019)**

Projection of GHG emissions (Mt CO₂eq)



- ✓ Total emissions (excluding LULUCF) in 2030: **-42% vs 1990, and -56% vs 2005**
- ✓ ETS sector in 2030: **-73% vs 2005**
- ✓ Non-ETS sectors in 2030: **-38% vs 2005**
- ✓ It is projected that Greece will meet the non-ETS (2020 ESD & 2030 ESR) targets, on the basis of the domestic policies and measures

	1990	2005	2019	2020 (WM+WAM)	2030 (WM)	2030 (WAM)	2040 (WM)	2040 (WAM)
ETS	-	71.8	40.5	31.7	31.2	19.3	23.5	16.7
Non-ETS	-	64.5	44.7	46.9	45.6	40.2	45.9	38.2.3
Total	103.1	136.3	85.6	78.8	77.4	60.1	70.1	55.6

National Energy Climate Plan of Greece Revision (Dec 2019)

The main pillars of the new plan are:

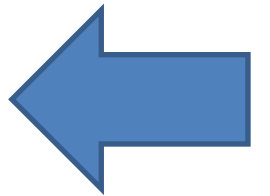
➤ According to NECP, the plan was to eliminate lignite-electricity production by 2028 the latest.

New plan: **lignite-free electricity production by 2025, three years earlier than planned**

➤ RES to a share of gross final energy consumption of at least 35%.

➤ improve energy efficiency in all sectors of the economy.

➤ The annual objective is to have an average of 60 000 buildings or building units upgraded in terms of energy and/or replaced with new more energy-efficient ones.



2030 mitigation targets

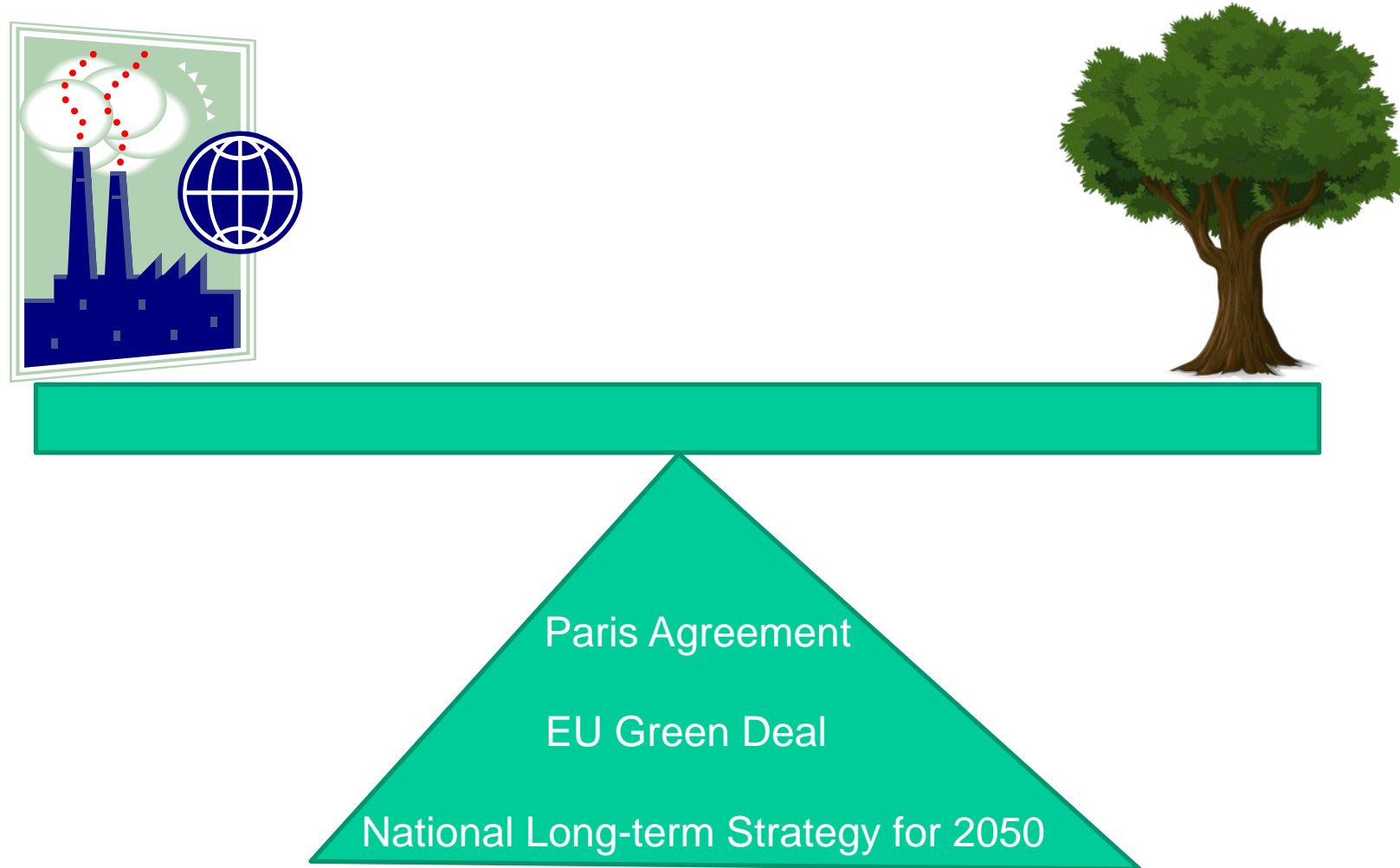


	NECP
Share of RES in Gross Final Energy Consumption	≥ 35%
Share of RES in Gross Final Electricity Consumption	≥ 60%
Final energy consumption	≤ 16.1 Mtoe
Total installed capacity of PV and wind	≥ 14 GW
Share of lignite in electricity production	0%

Expected GHG emission reductions

Reduction of GHG emissions	≥ 42% vs 1990 ≥ 56% vs 2005
Reduction of EU-ETS GHG emissions	73% vs 2005
Reduction of non-ETS GHG emissions	38% vs 2005

Climate Neutrality 2050



Just Transition Development Plans of lignite areas (West Macedonia and Megalopoli)



W. Macedonia: Expressed interest in 11 major projects estimated to mobilize over €2 billion in new investments in the region

	Large investments under consideration	Estimated investment
 Clean energy  <ul style="list-style-type: none"> Photovoltaic parks (~2GW) by PPC and ELPE Green hydrogen production unit by Solaris Power storage facilities by Eunice Field of energy research and technology¹ with PPP with UWM² 	~€1.5B	
 Industry, small industry and trade  <ul style="list-style-type: none"> Industrial park with emphasis on the manufacturing of electromobility products (lithium batteries, etc.) by a nationwide group Establishment of a waste management unit Biomass processing centre 	~€200M	
 Smart agricultural production  <ul style="list-style-type: none"> Smart agricultural production units of the latest technology (hydroponics) from an international company in the food industry 	~€100M	
 Sustainable tourism  <ul style="list-style-type: none"> Wine tourism ecosystem to the standards of Northern Italy, interest from a leading company in winemaking 	~€25M	
 Other investments  <ul style="list-style-type: none"> State-of-the-art physical rehabilitation clinic with PPP with public body 	~€60M	

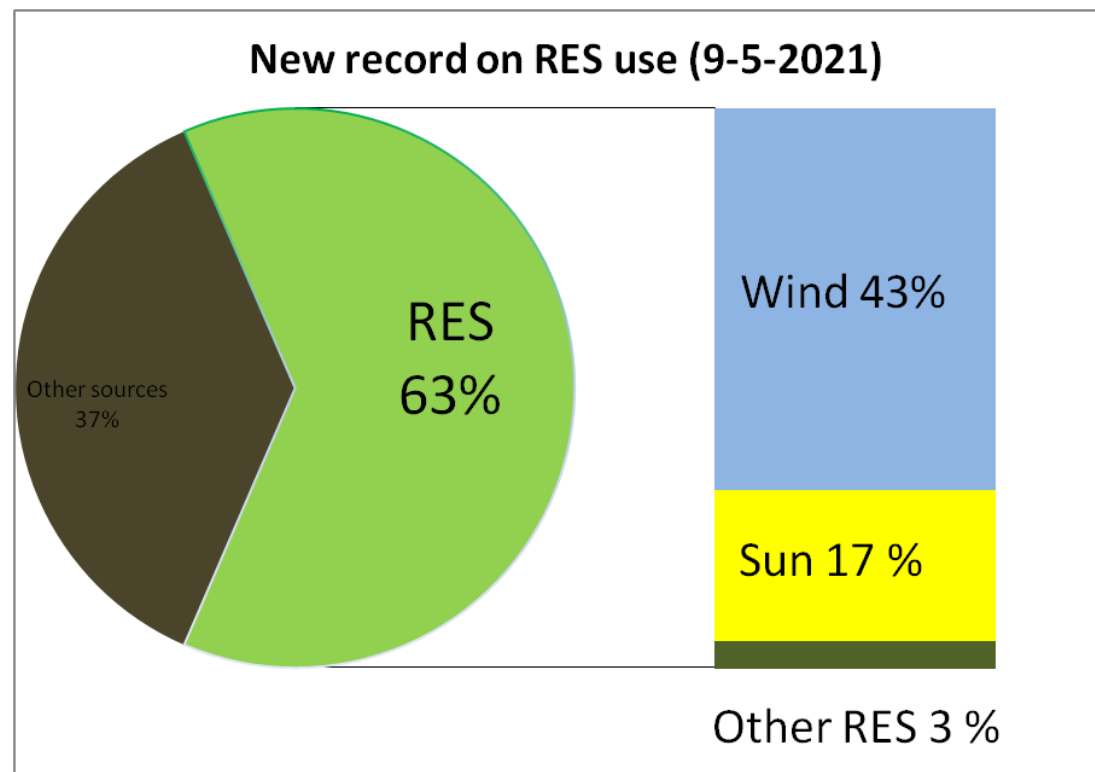
1. Indicatively: electromobility, hydrogen and alternative fuels, storage technologies 2. University of Western Macedonia Source: PPC, ELPE, investment plans, Proposals, SDAM Team Analysis

Megalopoli: Expressed interest in 5 major projects estimated to mobilize ~ € 0.5 billion new investments in the area

	Large investments under consideration	Estimated investment
 Clean energy  <ul style="list-style-type: none"> Photovoltaic parks (~ 0.6GW) from PPC 	~€250M	
 Industry, handicrafts and trade  <ul style="list-style-type: none"> Standard pharmaceutical industry, from a large pharmaceutical industry 	~€90M	
 Smart agricultural production  <ul style="list-style-type: none"> Intelligent livestock and feed unit and smart agricultural production units 	~€40M	
 Sustainable tourism  <ul style="list-style-type: none"> Original adventure, entertainment and education theme park with interest from an international entertainment company 	~€40M	
 Other investments  <ul style="list-style-type: none"> Other public investments 	~€30M	

Source: PPC, Investment plans, Proposals, SDAM Team Analysis

A window to the future



Approx. a month ago, the 9th May 2021 in particular, we experienced a record **63% contribution from renewables** in the total national energy demand in Greece (65.9 GWh out of 104.1 Gwh)

From the energy consumed that day, the wind mills "starred" with 43%, photovoltaics contributed 17% and the other RES (hydroelectric, biogas-biomass etc.) the remaining 3%.

National Recovery and Resilient Plan Next Generation EU



- The Greek Recovery and Resilience Plan (RRP), Greece 2.0, aspires to change the Greek growth model and institutions:
 - Via ambitious reforms and investments
 - Towards an extroverted, competitive, green and digital growth model
 - One of the main pillar is “green transition” with RFF budget 6.2 € bn and expected total mobilized investment resources of 11.6 € bn.
 - Key investments:
 - Upgrading energy efficiency of buildings for households, firms and the public sector
 - Investments in energy storage, electric charge points, batteries, electric vehicles
 - Improving electric interconnectivity of islands
 - National reforestation plan , biodiversity and strengthening of civil protection
 - Urban plans and strategic urban regeneration



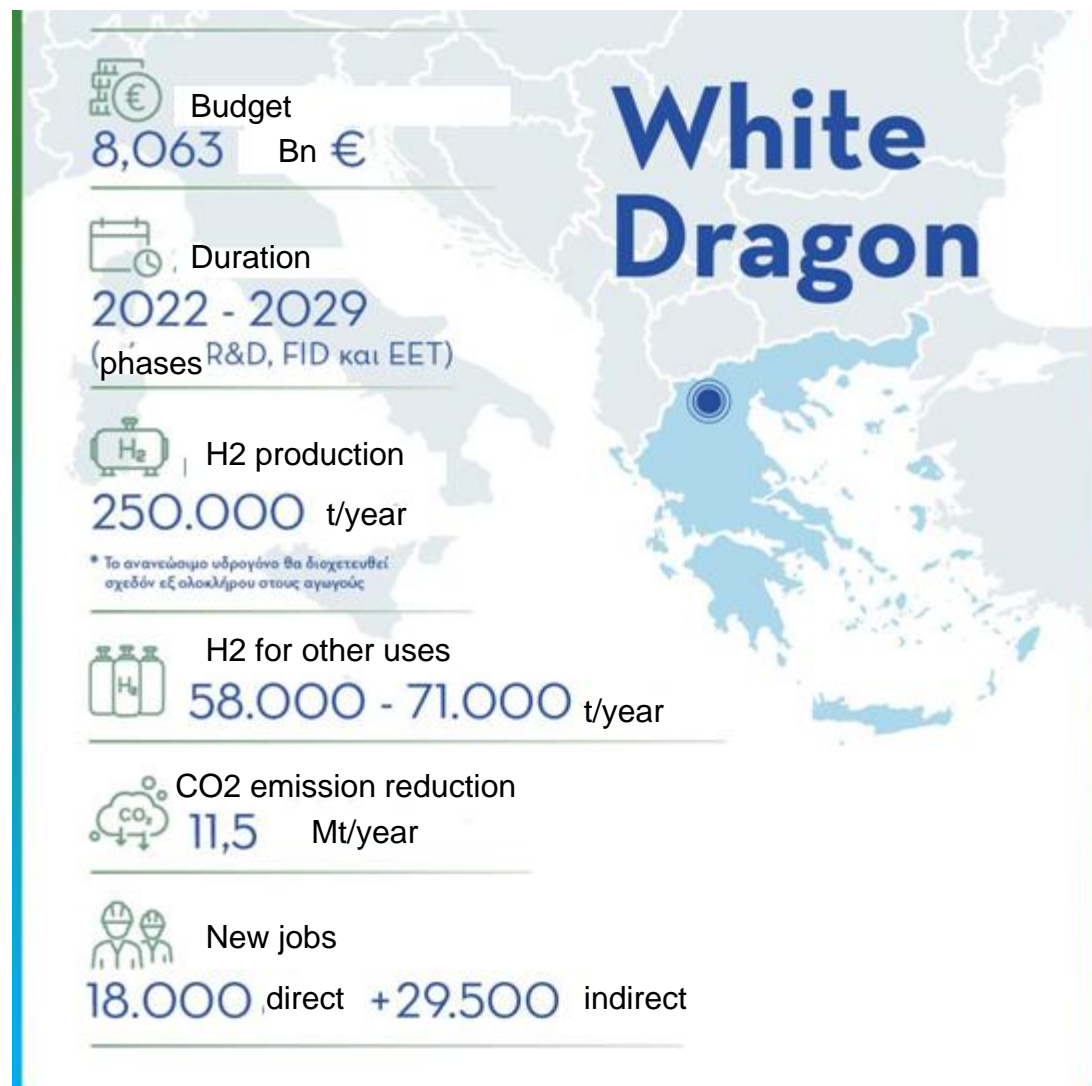
Programme for the energy efficiency upgrade of buildings



Target: 60.000
buildings upgraded
per year by 2030

The estimated cost
is approx. 2 billion €

New project for green H2 production



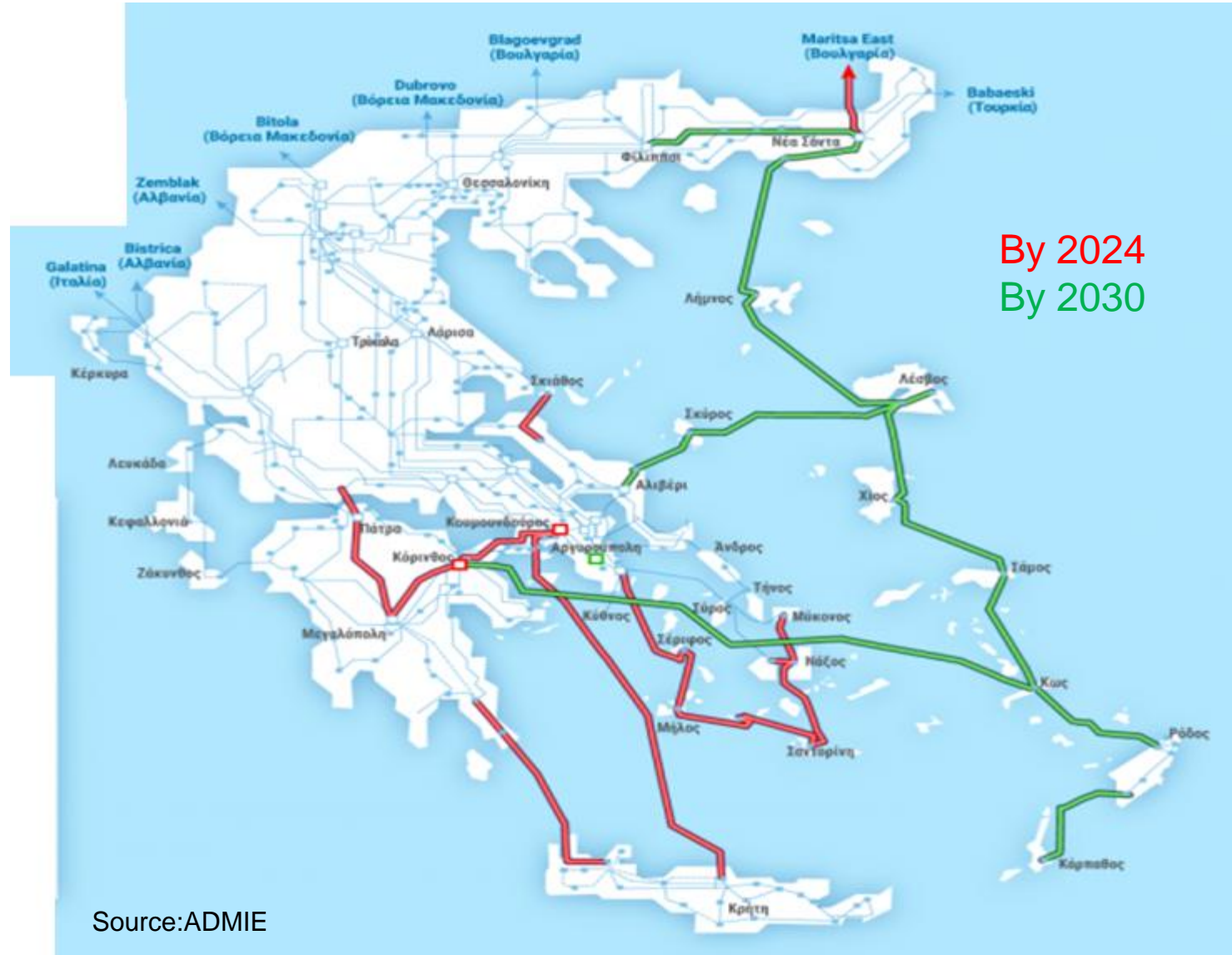


E-mobility



- +Bonus 1000 € for disabled people and large families
- +Withdrawal bonus 1000 € for old car and 400 € for old motorcycle
- +Bonus 500 € for recharger
- +Exemption from paying road tax
- +Free circulation in the city center and free parking for 2 years

Interconnection with islands



Reforestation



30 million trees by 2030



Adaptation



- National Climate Change Adaptation Strategy (NAS)**
- Regional Adaptation Action Plans (RAAPs)**
- National Climate Change Adaptation Committee - NCCAC**
- Scientific Committee for Climate Change & Climate Change Ambassador**
- National Climate Adaptation Monitoring and Reporting Observatory**



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Thank you!

