

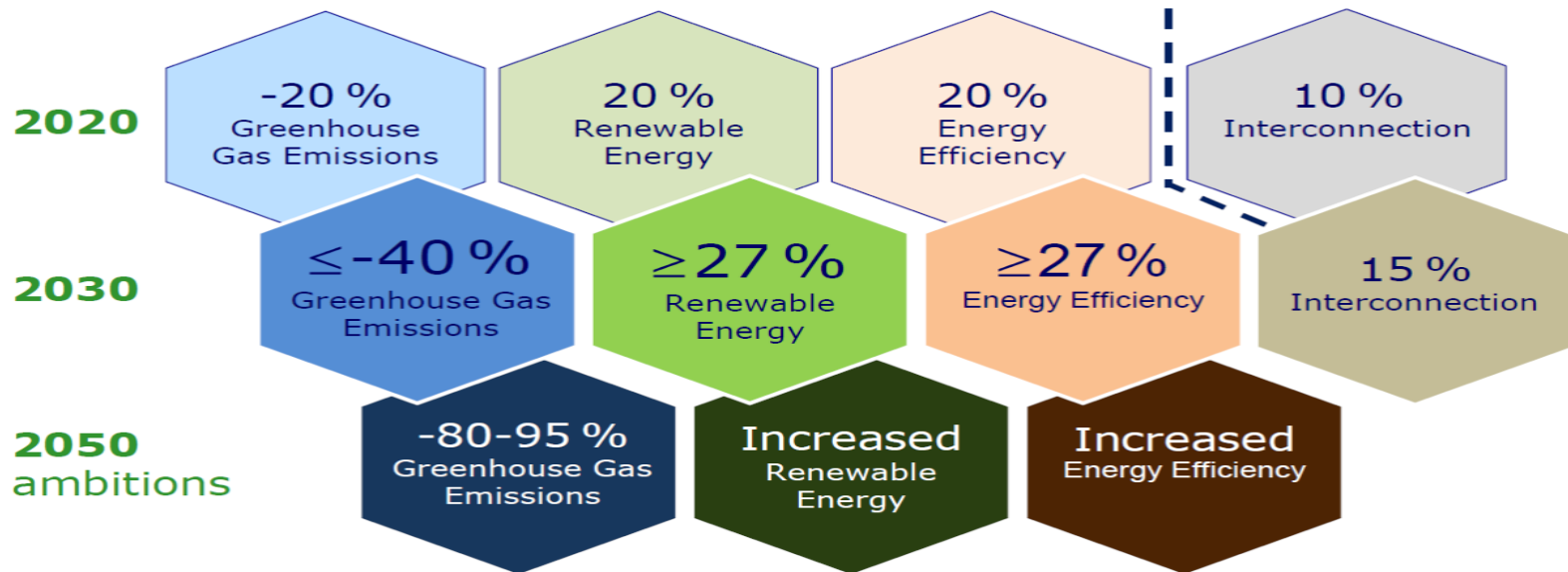
Smart Adapt or Die?

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Distribution Network Operator, HEDNO*



European Targets for 2030 (agreed 10/2014)



27% renewable energy in 2030: up to 45% renewable electricity

Smart Grids Development and EU Research Coordination
L. Martini - Keynote at PowerEng2015, Riga, 12/5/15



High Environmental Standards can Only be achieved through Smart Grids



Transition to an energy market that will both meet high environmental standards and offer high quality services at a low cost can only be achieved through the use of smart grids,

For this purpose, smart grids at the center of the strategic planning of the modern Electricity Distribution Corporations.
Smart Grids open the way for the transition towards the advanced systems of the future

Technology is the key to achieve European Targets and execute **transition to zero-carbon economy**

Smart Grids-WHY?

They deliver renewable energy to consumers and enhance flexibility, thereby increasing penetration

Effective network operation

Automated processes help balance the system that uses a number of different sources of energy

Consumers make smart choices for the use and supply of energy



Towards smart distribution systems



- ❑ European networks will require **€600** billion of investment by 2020
- ❑ **€400** billion of this investment will take place in **distribution grids**
- ❑ The **DSO** share of overall network investments is estimated to grow to almost 75% by 2035 and to 80% by 2050
- ❑ **€62** billion on digitalization for European Power Grids through 2025



The Greek electricity market towards 2020



The economic crisis negatively affects electrical energy demand
Consumers, industry and businesses asking for lower electrical energy rates

Full-force RES penetration generates a surplus of power and, as RES are taking priority over conventional units, these are less likely to achieve investment amortization

Re-organization

- ☐ New players in the market; a change in the PCC share, hence a change in the role of HEDNO, IPTO, LAGIE, etc
- ☐ NOME auctions
- ☐ Implementation of a single model in the European Market (EU Target Model)



HEDNOs mission



Our mission is to ensure proper operation, maintenance and development of the distribution network and management of the Non Interconnected Islands Electricity Systems.

Delivering uninterruptible electricity to 7.4 million consumers across the country

The company's vision is to achieve the best possible combination of quality services and low cost **giving first priority to the environment**



**Total installed RES
capacity (MW):
3,790**

**Total Network Length:
236,000 km**

**Amount of RES
installed in the
Interconnected
Network: 56,491**



RES connected to the Network



RES Interconnected & Islands	Amount	Capacity (MW)
PV Roofs	41,421	374
PV Net Metering	272	4
PV LV	12,857	942
PV MV	1,621	1,220
Small Hydro	104	189
Wind Farms	167	927
CHP	24	74
Biogas	22	52
Biomass	3	8
TOTAL	56.491	3.790

Non Interconnected Islands (NII):

Amount of RES 5.098
Total capacity 483 MW
97 Wind Farms 323 MW
1758 PV 136 MW
3242 PV Roofs 24 MW
1 Small Hydro 0,3MW



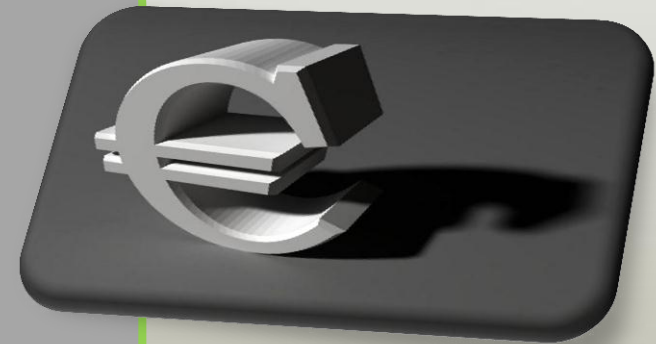
Towards a Smart Hellenic Electricity Distribution Network



Our strategy is built upon the implementation of new technologies

HEDNO's Transformation Plan (2015-2020):

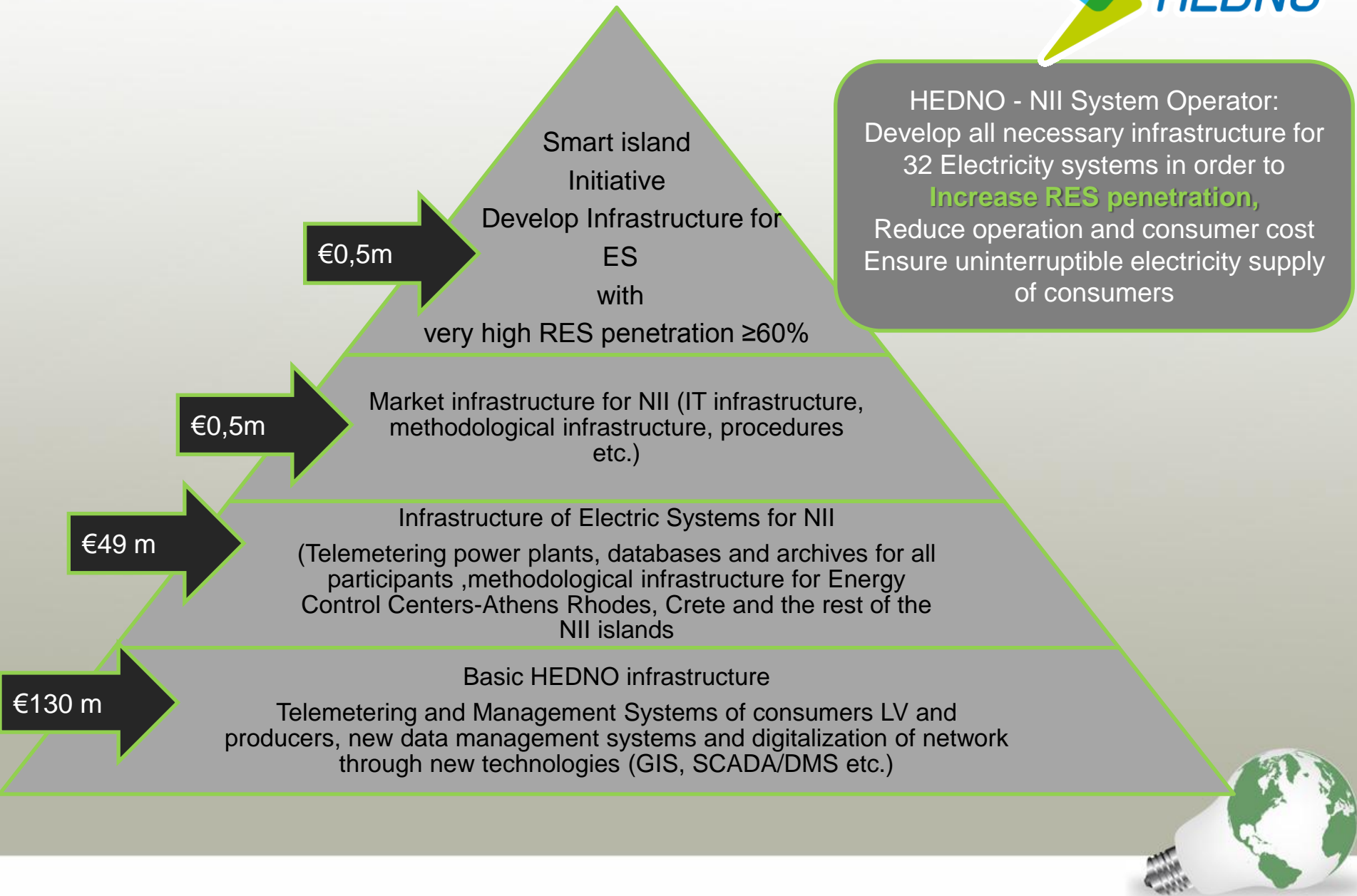
1. Modernize Attica network Control Centers
2. Establish Island network Control Centers
3. Modernize network control centers in the rest of the Country
4. Upgrade remote metering equipment of the regional networks
5. Set up a Geographic Information System (G.I.S.)
6. Set up a new web-based Customer Service System
7. Set up remote customer service systems
8. Upgrade Network Development Planning
9. Build infrastructure in Non-Interconnected Islands to implement NII Code
10. Develop "Smart Island", Pilot project – Further expansion plan
11. Apply remote metering for LV customers, Pilot project - Further expansion plan
12. Re-organize supply chain



1.25 billion investments



Towards Smart Islands





Thank you very much

