

# Towards a new energy model

## High-Level Panel

IRENA Innovation week

*Bonn May 11<sup>th</sup> , 2016*

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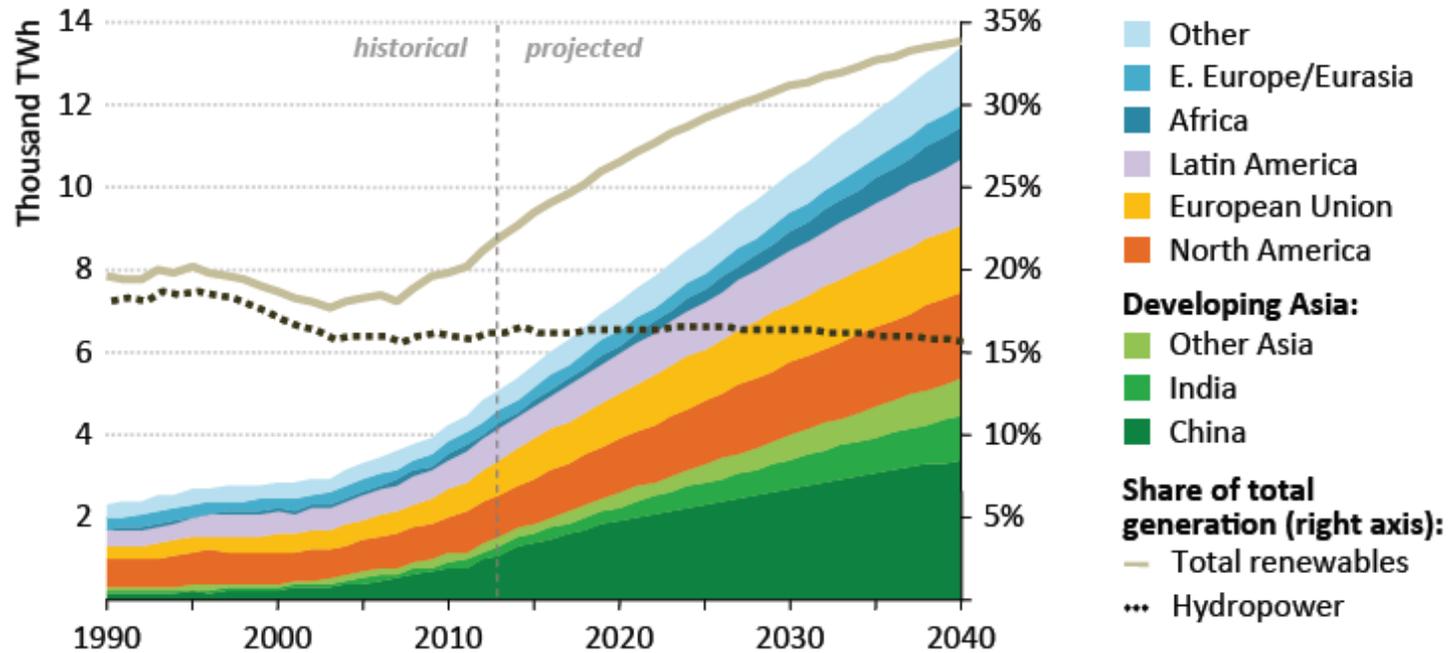


# The Age of Renewables

Two-and-a-half times increase in RES generation between 2013 and 2040



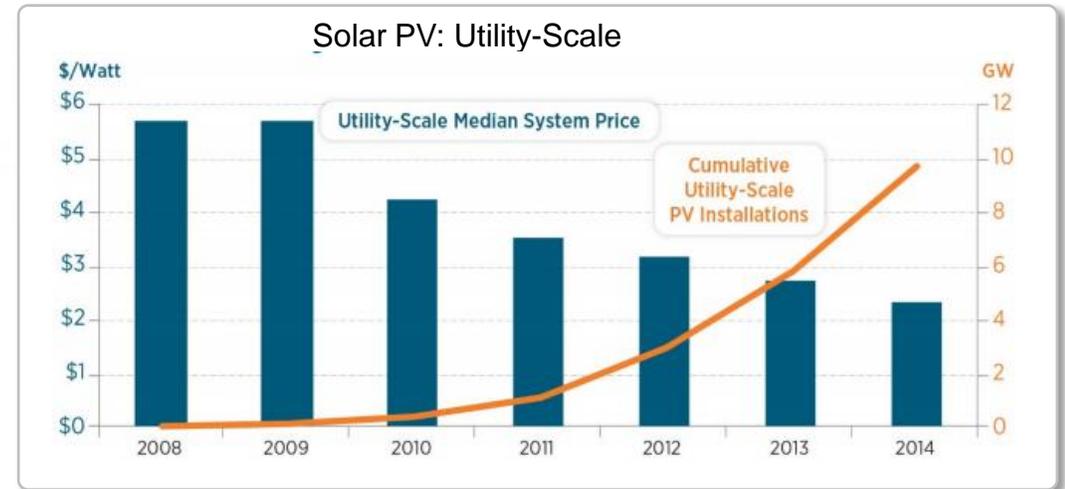
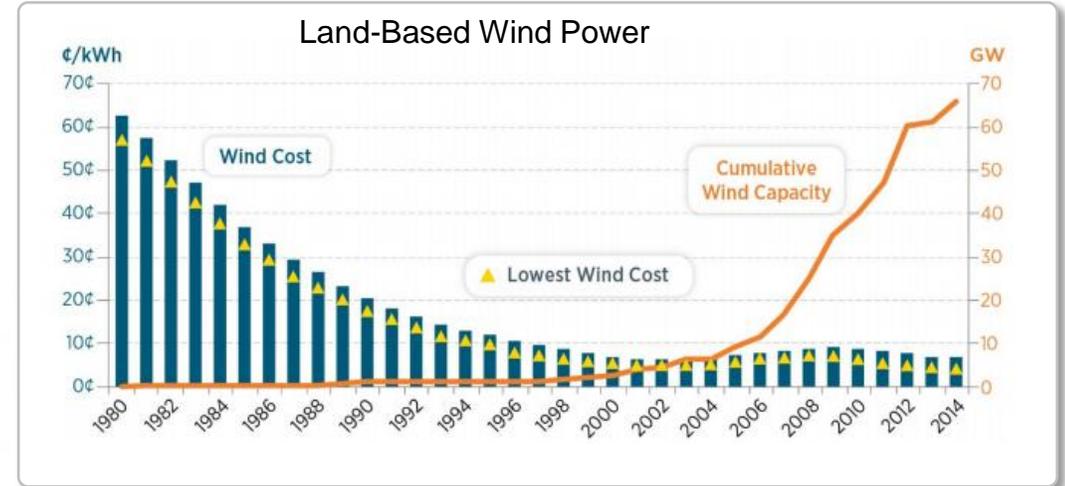
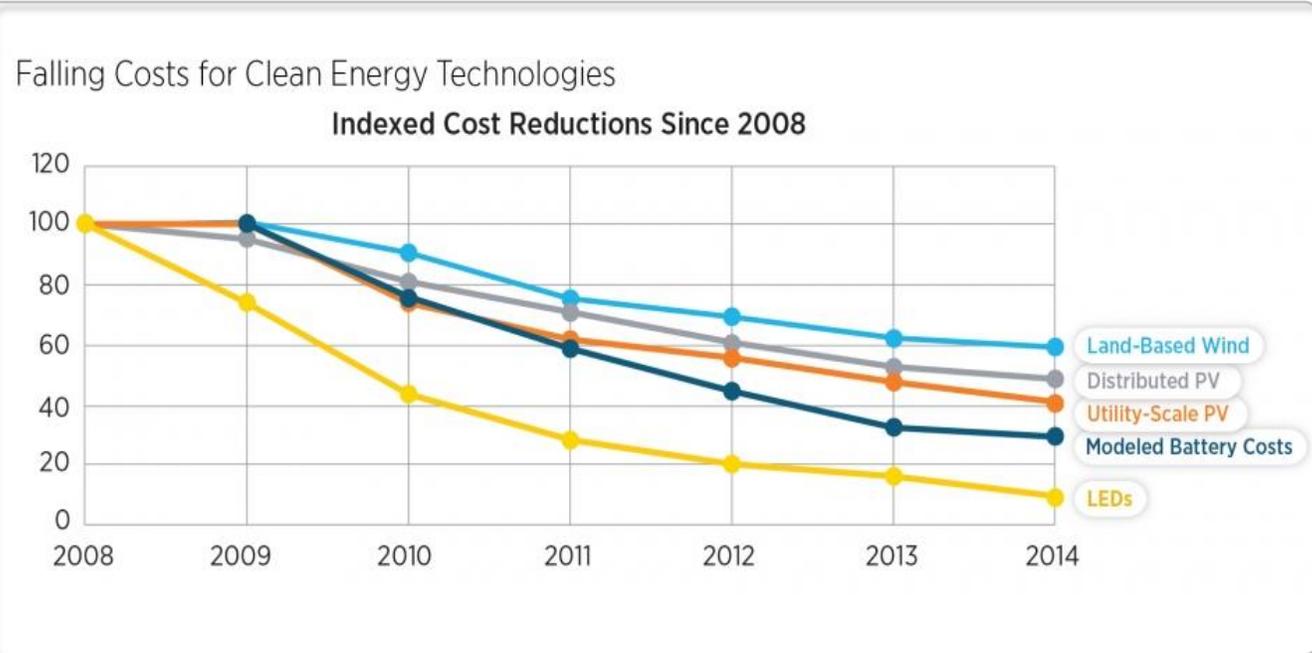
Renewables-based electricity generation by region in the New Policy Scenario



...Much was achieved but a lot still remains to be done....

# The decreasing costs of clean technologies...

*Decarbonization goals are now economically feasible*

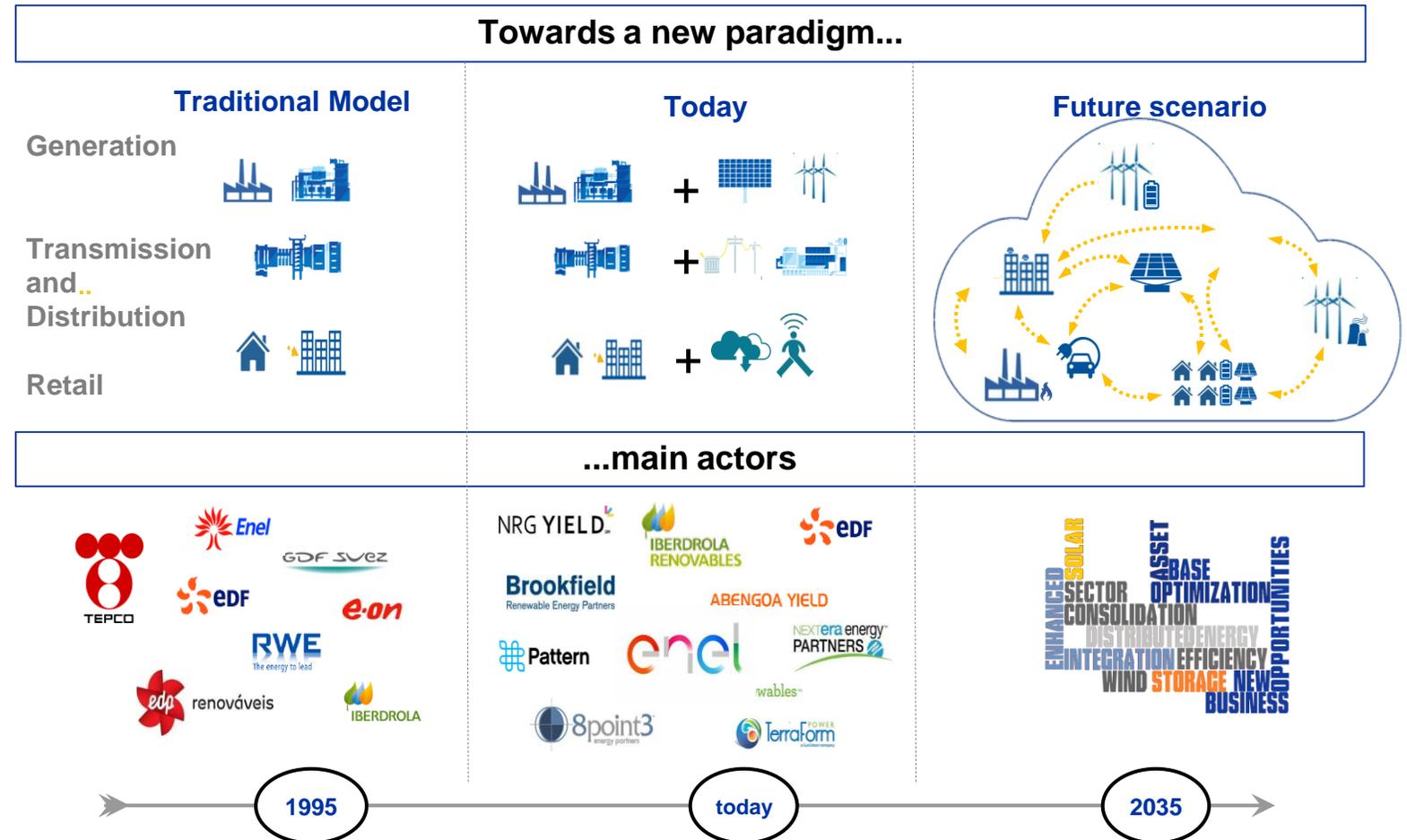


# ...brings profound transformations

*An ongoing transition*



- **The transformation has already started** - The power sector is experiencing a deep transformation towards a fully decentralized energy system
- **Renewables and smart networks will be crucial elements of the energy transition** - The deployment of distributed generation sources and smart appliances coupled with the increasing penetration of the electricity vector into final uses will bring:
  - ✓ An active participation of customers
  - ✓ Digitalization of distribution networks
  - ✓ New market participants



# Enel leading the change

Ranked 5<sup>th</sup> in last Fortune's "Change the World" Index



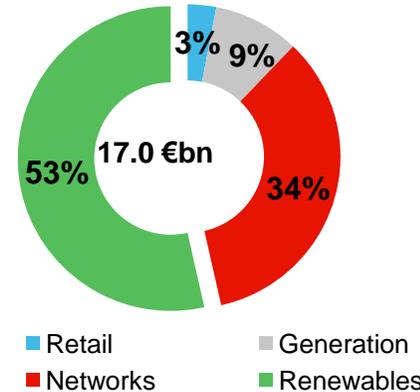
## Consolidating a global presence<sup>1</sup>



A global operator active in more than 30 countries..

## Investing in Renewables and Networks

### 2016-2019 Industrial Plan Growth Capex



More than 9 bn € investments in renewables and almost 6 bn € in networks over the next 4 years

## Open Innovation



Innovative universities & Research centers

**Startups**  
1200 screened  
300 met  
30 ongoing projects



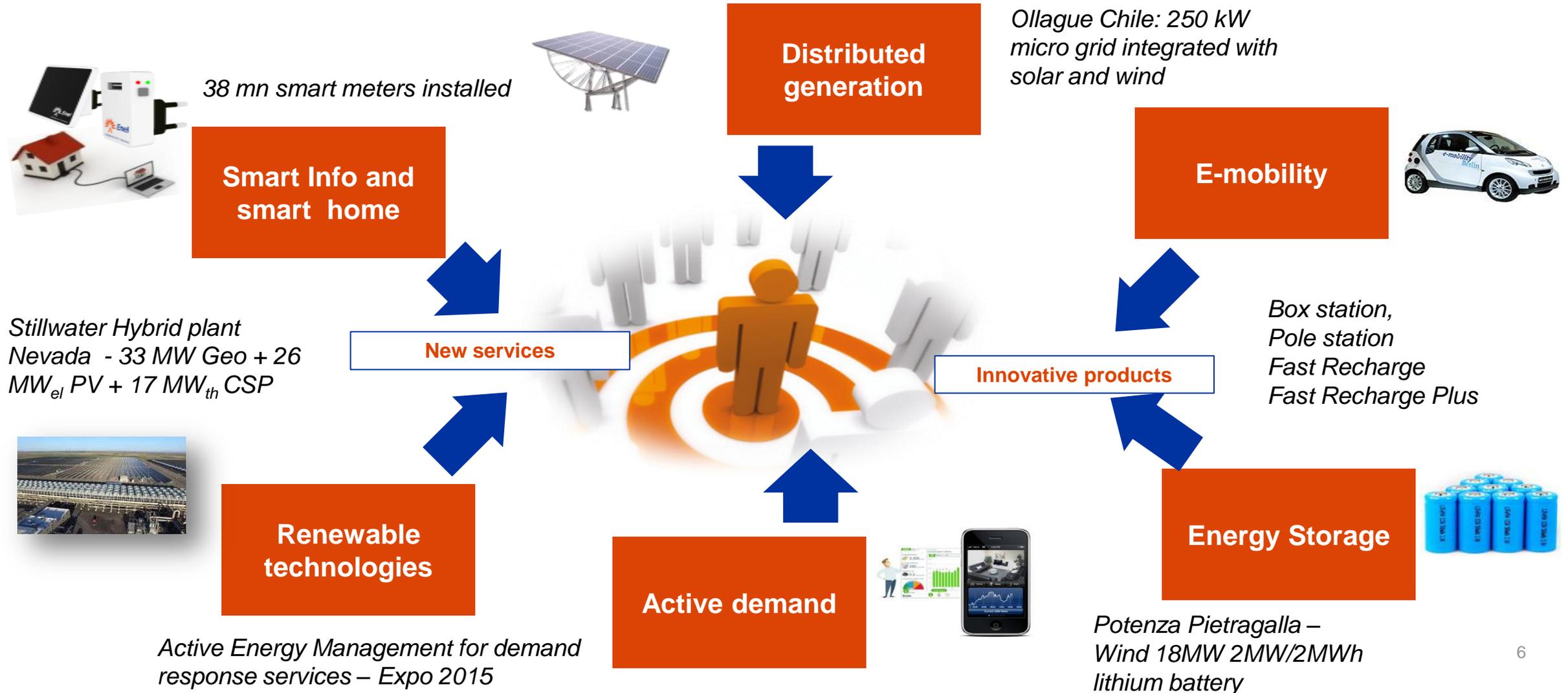
VCs & Accelerators

Different actors and complementary resources are teaming up in order to generate innovation

(1) As of 31<sup>st</sup> December 2015  
Presence with operating assets

# Implementing the new business model

Utility 2.0 and opportunities driven by distributed generation

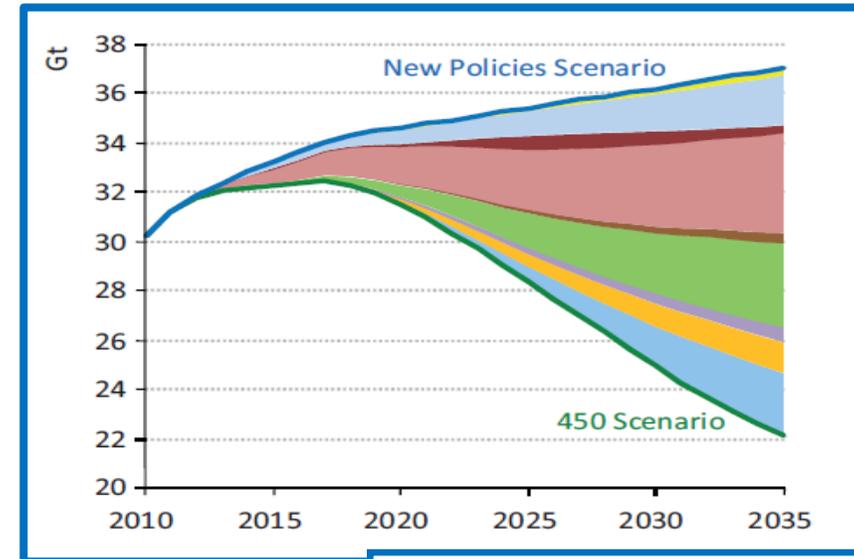


# Enabling conditions to meet the 2 °C goal

*How to fully exploit RES potential in a cost-effective way*



- **Policy framework** - Strong commitment to decarbonization has to be supported by clear and long term climate targets on RES deployment and CO<sub>2</sub> emission reduction
- **Market design** – Proper market design will be crucial to exploit the full RES potential in a cost-effective way
  - ✓ **Long term contracts** to fully hedging price risks awarded through competitive mechanisms (e.g. tenders) and allowing the integration of RES into the market
  - ✓ **A market structure fit for RES ensuring a level-playing field for all sources** including markets gate closures close to real time, balancing and ancillary services markets enabling RES participation, clear and transparent rules for curtailment and fair compensation
  - ✓ **Streamlined permitting procedures for Renewables** (e.g. one-stop-shop)



CO <sub>2</sub> abatement	2020	2035
Activity	2%	2%
End-use efficiency	18%	13%
Power plant efficiency	3%	2%
Electricity savings	50%	27%
Fuel and technology switching in end-uses	2%	3%
Renewables	15%	23%
Biofuels	2%	4%
Nuclear	5%	8%
CCS	4%	17%
<b>Total (Gt CO<sub>2</sub>)</b>	<b>3.1</b>	<b>15.0</b>

# Conclusions



- Much has been achieved but a lot remains to be done
- Enel is leading the change in the utilities' sector at global level
- Realizing the full RES potential will require strong political commitment and a radical market transformation
- Long term price signals driven by both policy and markets will play a fundamental role