



# Beyond Paris: the electricity industry and the accelerated momentum of climate policy

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# An investor's view on the Paris Agreement

*Positive signals include ambition, stability, role of markets and funding commitments*



## The Paris Outcome

**Ambition** - Long term goal of keeping raising temperature “well below 2°C” with efforts to stay within 1.5°C:

- Emission peak “as soon as possible”
- Carbon neutrality in the second half of the century

**Scope & Governance** - A transparent framework foreseeing :

- More than 95% of global emissions covered
- “Highest possible ambition” through NDC (*Nationally Determined Contributions*)
- 5 years pledge review system

**Carbon Markets** - Reference to carbon trading through “mitigation outcomes” and new project-based crediting mechanism

**Climate Finance** - 100 Bn USD/yr minimum floor to finance mitigation and adaptation measures. Green Climate Fund (GCF) and the Global Environmental facility (GEF) mentioned as key funding mechanisms

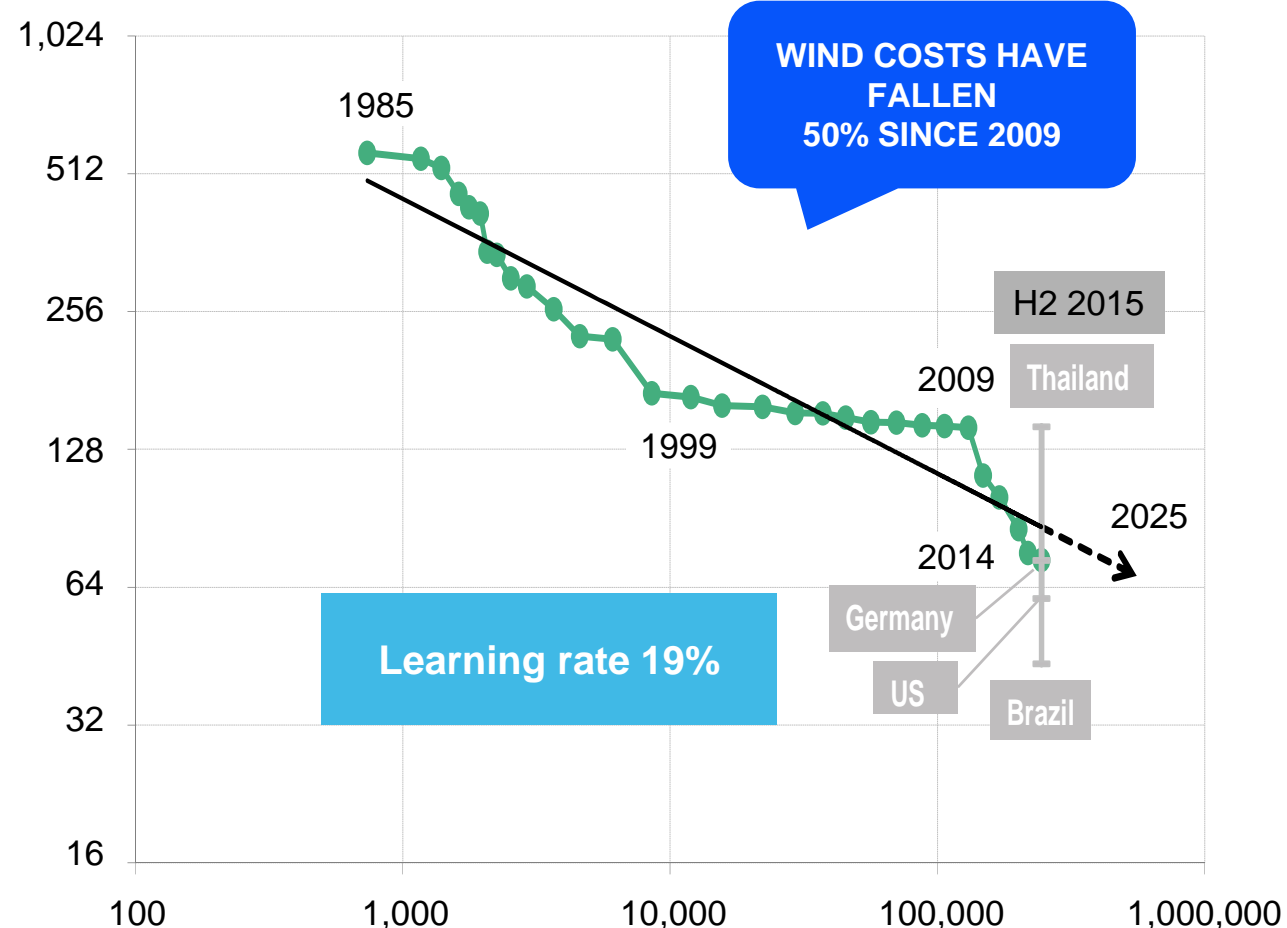


# The decreasing costs of clean technologies...

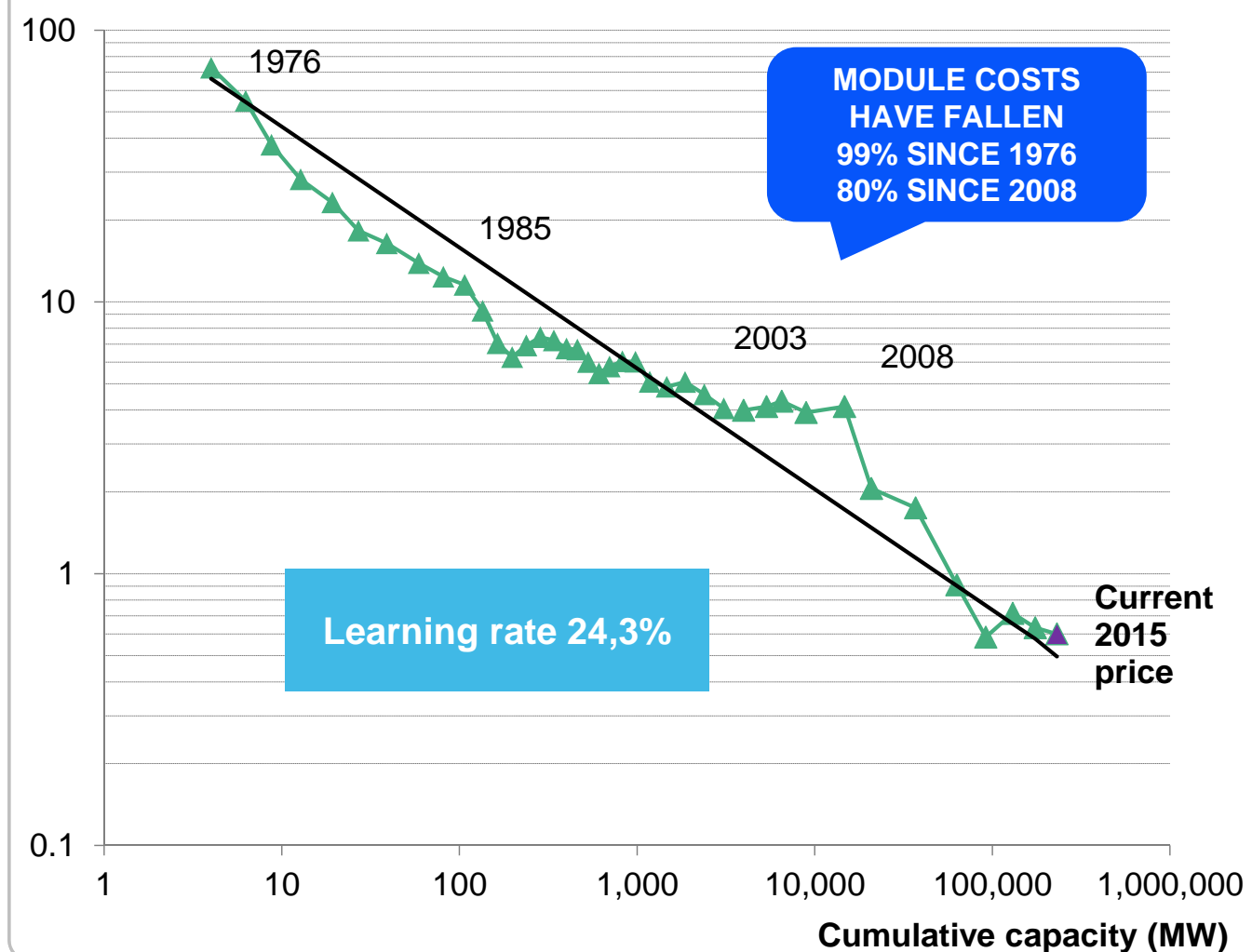
*Decarbonization goals are now economically feasible*



**Onshore Wind Levelized Cost (\$/MWh)**



**Solar PV Module Cost (\$/W)**



Note: Pricing data has been inflation corrected to 2014. We assume the debt ratio of 70%, cost of debt (bps to LIBOR) of 175, cost of equity of 8% Source: Bloomberg New Energy Finance  
Learning rate is defined as the price reduction rate based on capacity increase

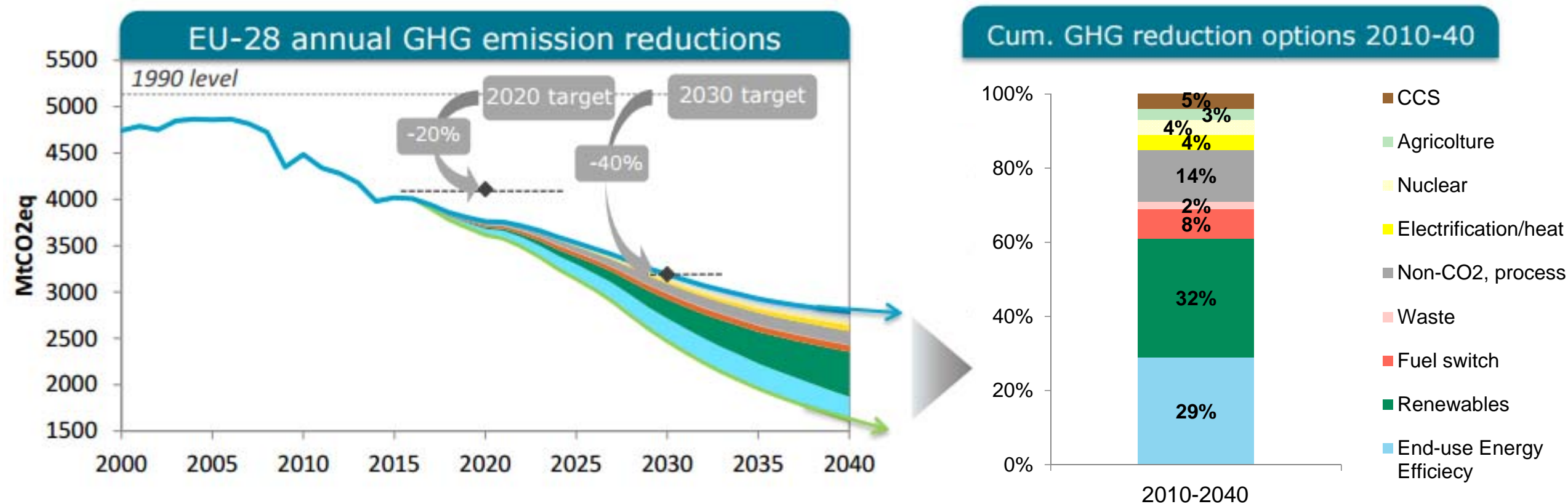
Note: Prices are in real (2015) USD. 'Current price' is \$0.61/W Source: Bloomberg New Energy Finance, Maycock; Learning rate defined as price reduction rate based on capacity increase

# Sectors' contribution to decarbonization

*Renewables and end-use efficiency supported by digitalized grids will play a major role*



## The EU Scenario



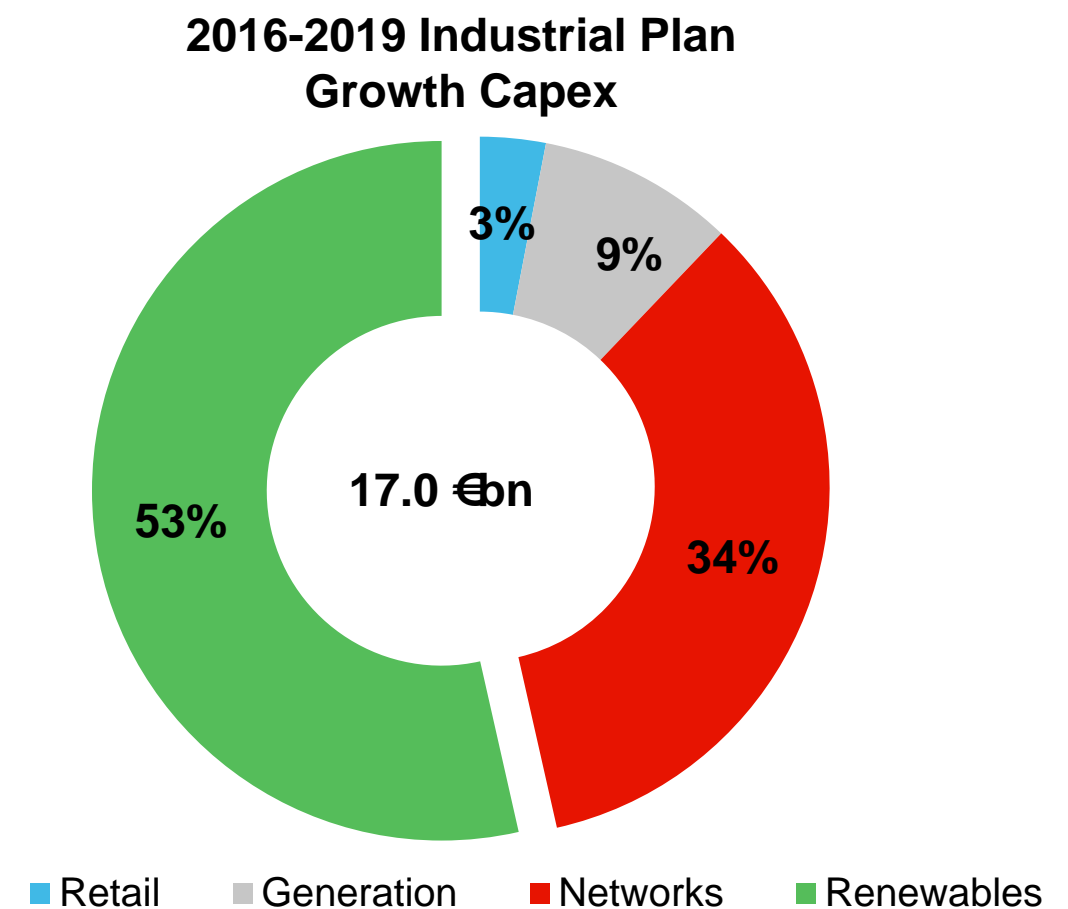
# Enel Group's commitment

*An investment plan fully consistent with the post-Paris Scenario*



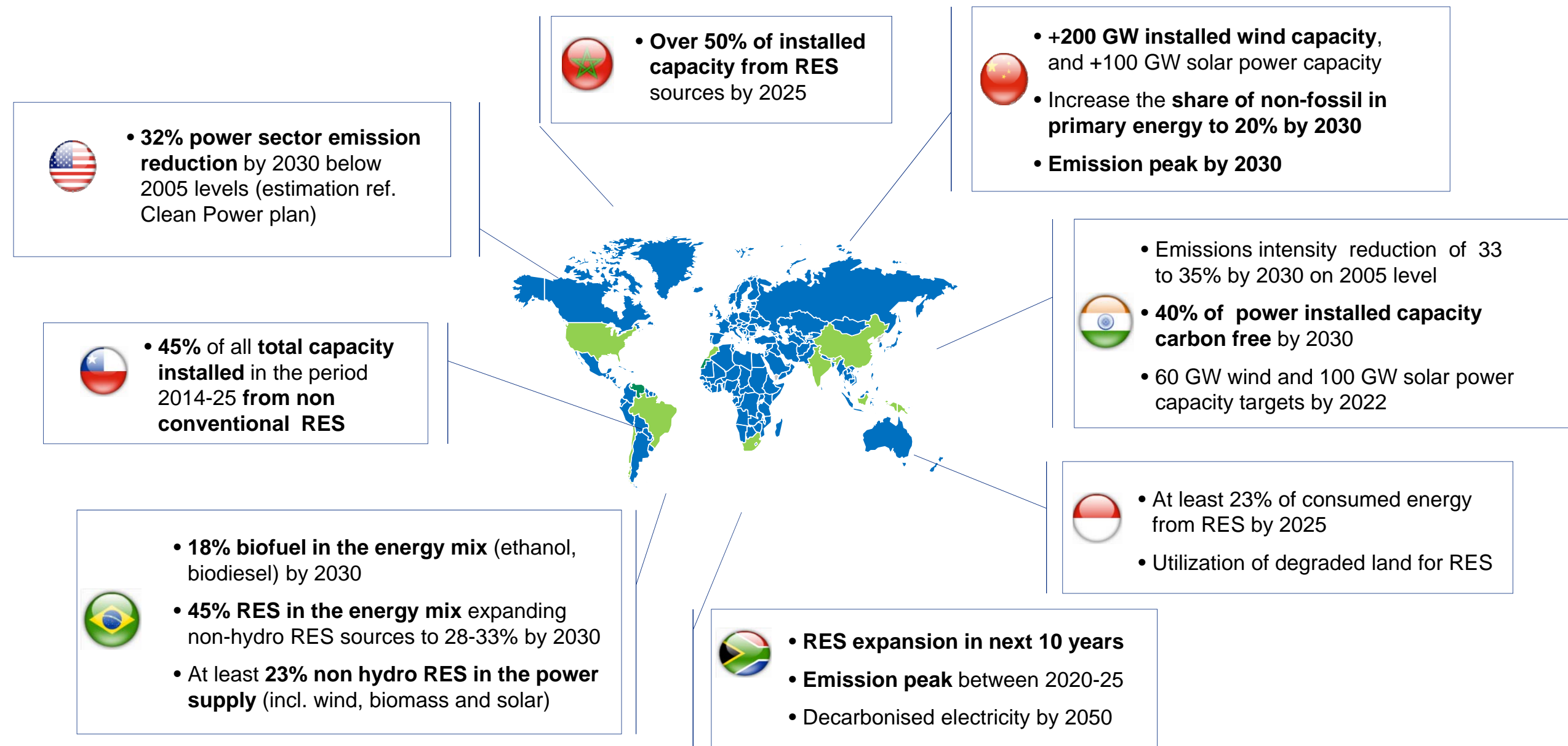
- **The Enel Group is fully committed to the decarbonisation path undertaken with the goal of achieving carbon neutrality by 2050.** Over 45% of the power generated by Enel in 2015 was carbon free.
- **Enel's low carbon commitments for the period 2016-19 include:**
  - ✓ **9 bn€ for 7.7 GW of new renewable installed capacity** (equal to 85.4% of total generation investments over the same period)
  - ✓ **Almost 6 bn € planned investments in Smart distribution and transmission networks** aimed at preparing the transition towards demand-side management models
  - ✓ **Cutting CO<sub>2</sub> emission intensity by 25% with respect to 2007 levels by 2020**

## Investing in Renewables and Networks



# Assessing the low carbon side of INDCs

*Climate Policies have focused and accelerated on the renewable energy side*



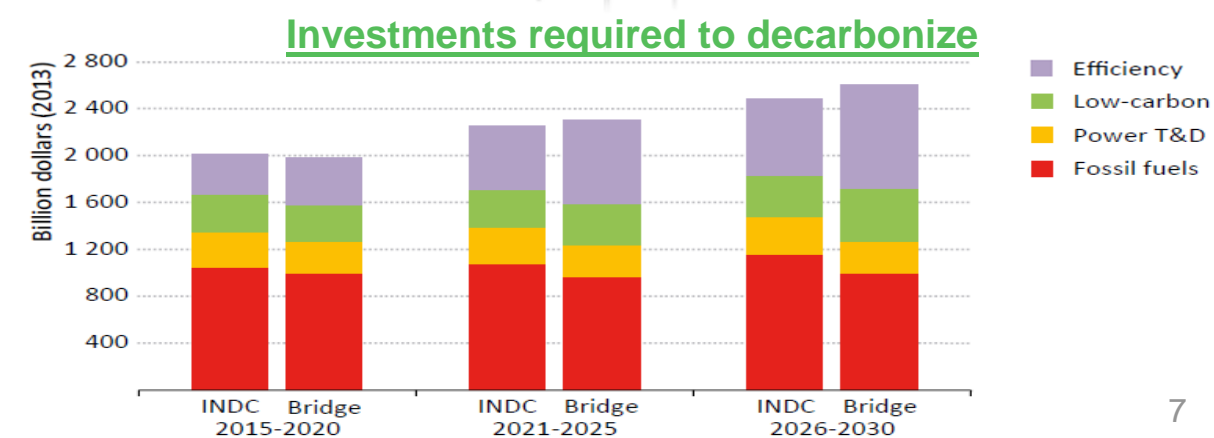


# Assessing the infrastructure side of INDCs

*Climate policies are still overlooking the importance of digitalized grids*



- The Paris Agreement's INDCs do not appear to realize the importance of grid upgrading and digitalization despite significant investments in:
  - ✓ **Electric vehicles**
  - ✓ **Energy efficiency technologies**
  - ✓ **Distributed generation** (e.g. solar panel)
- **T&D investments will be crucial to manage the system and allow the interaction of smart technologies.** Main aspects to be addressed include managing:
  - ✓ Demand side centers
  - ✓ Distributed generation
  - ✓ Intermittent RES
- **Urgent need to emphasize key role of smart grids and long distance transmission in delivering GHG reductions**



# Conclusions

*We are heading in the right direction but more needs to be done*



- Paris played a fundamental role in accelerating climate policies but a significant ambition gap exists between the global Paris goal and national targets
- Steep reductions in the low carbon cost curve are making decarbonization more accessible
- RES and infrastructure development will play a key role in delivering the emission reductions needed
- Current policies reflected in INDCs provide RES with a significant role but appear to overlook the central role digitalized infrastructures will need to play