



Capital Markets Day

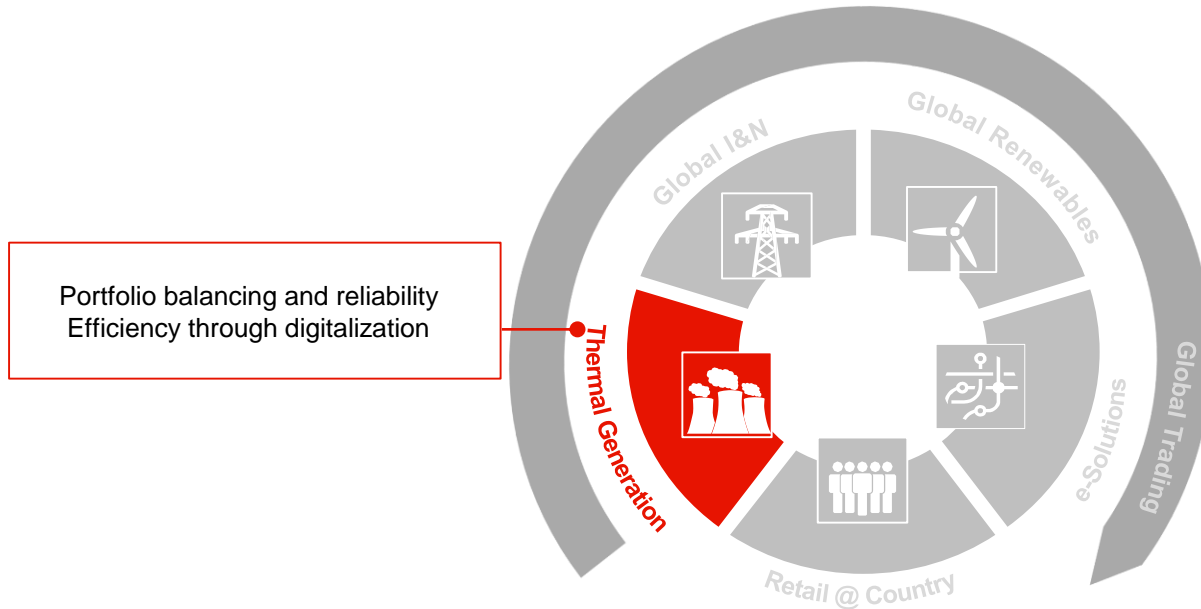
Global Thermal Generation

Enrico Viale



Capital Markets Day – Global thermal generation

Integrated model fit for digitalized, low carbon world



Maximizing value creation in residual asset life

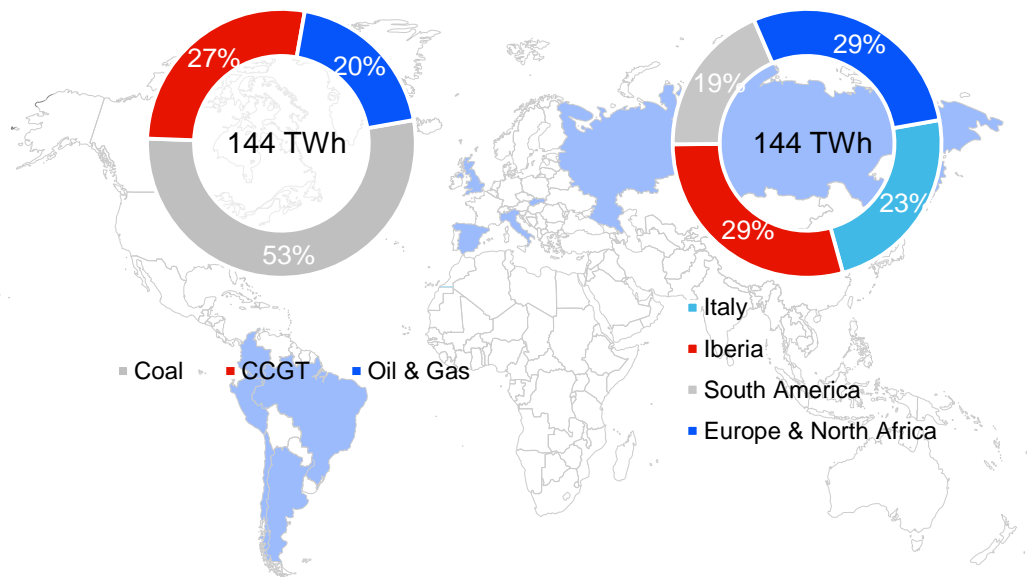
Capital Markets Day – Global thermal generation

Positioning and key figures



2017 net production by technology¹

2017 net production by geography¹



Key figures

2017

Installed capacity ¹ (GW)	43
Net production (TWh)	144

Financials² (€bn)

EBITDA	1.5
Cash cost	2.1
Opex	1.6
Maintenance capex	0.5
Growth capex	0.2
Total capex	0.7

1. Excluding nuclear contribution equal to 3.32 GW of installed capacity

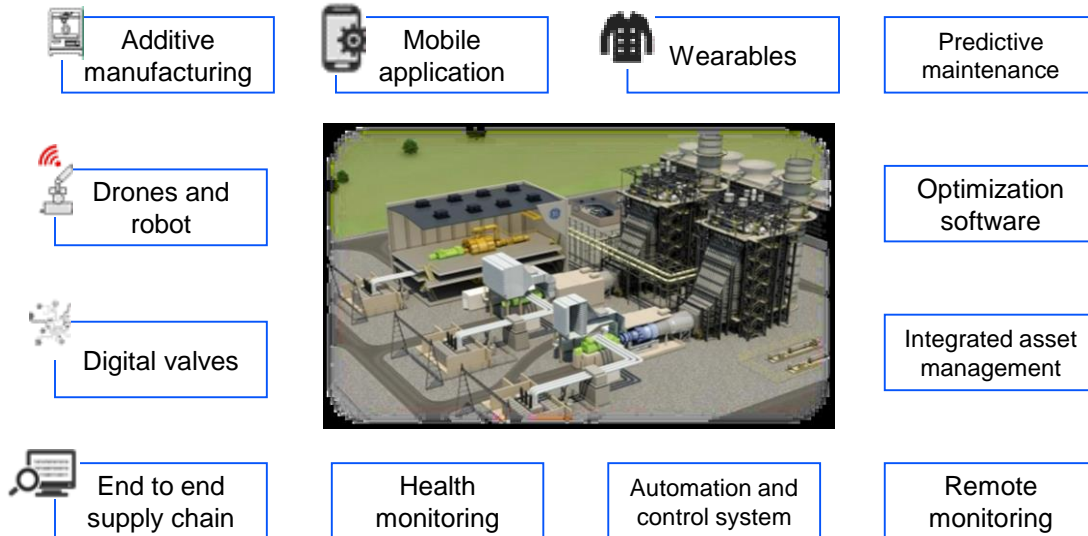
2. Excluding nuclear and trading

Capital Markets Day – Global thermal generation

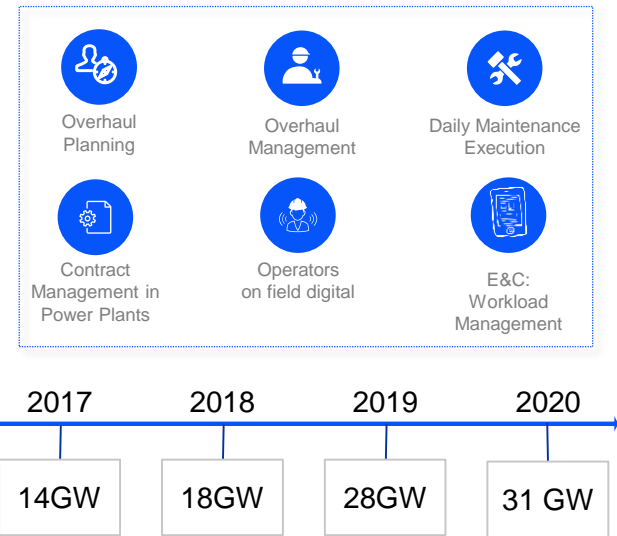


Digital transformation: project status

Digitally integrated smart plant – reference model



Processes digital re-design



31GW digitalized, about 90% of whole thermal generation fleet¹

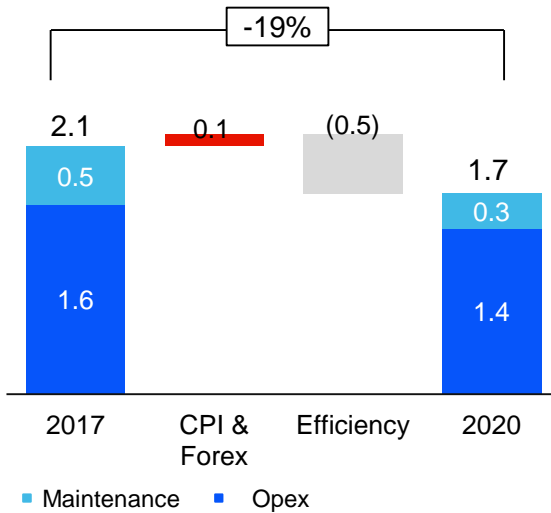
1. Excluding nuclear

Capital Markets Day – Global thermal generation

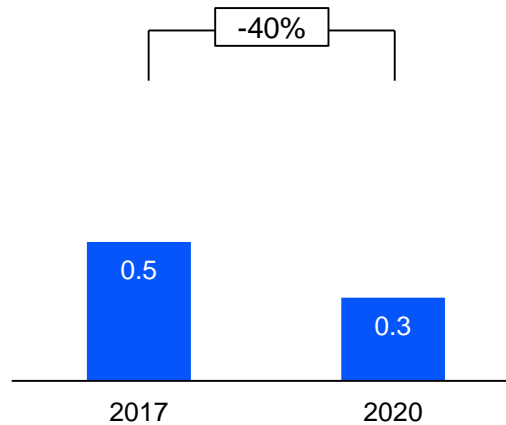
Efficiency



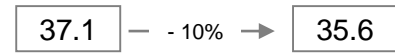
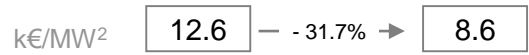
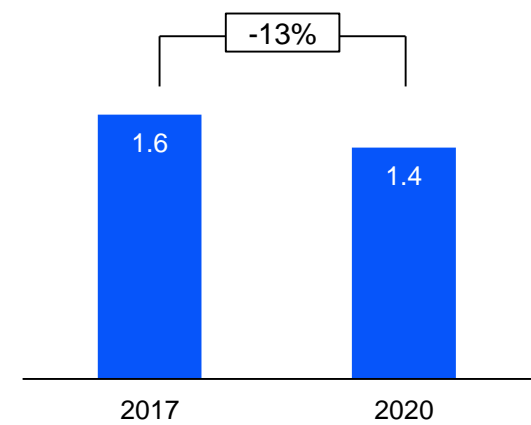
Cash cost evolution¹ (€bn)



Maintenance¹ (€bn)



Opex¹ (€bn)



1. In nominal terms, excluding nuclear
 2. At 2017 real values - Net marginal assets and non recurrent items

Capital Markets Day – Global thermal generation

Capacity strategy



Key levers

Spending allocation based on plant profitability

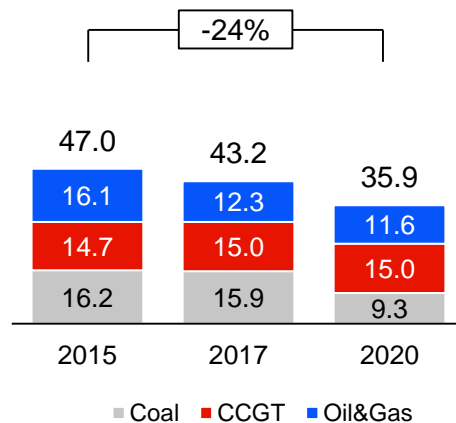
Portfolio optimization, leveraging on strategic positioning

Progressive coal phase out

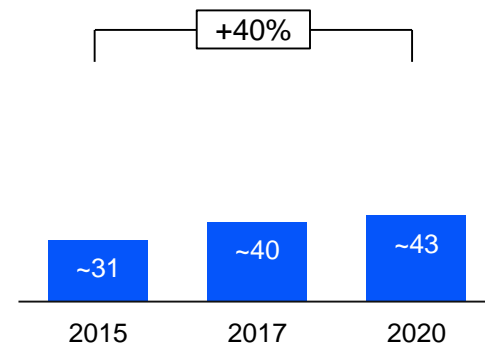
Clear path to decarbonization



Installed capacity¹ (GW)



EBITDA per MW² (k€/MW)



Ongoing installed capacity optimization

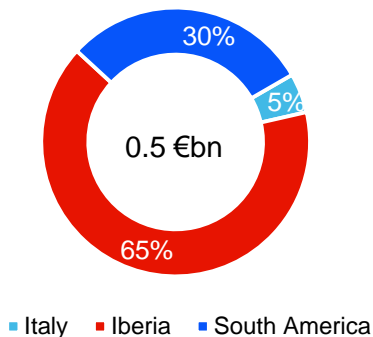
1. Excluding nuclear
2. Excluding Italian marginal assets effects

Capital Markets Day – Global thermal generation

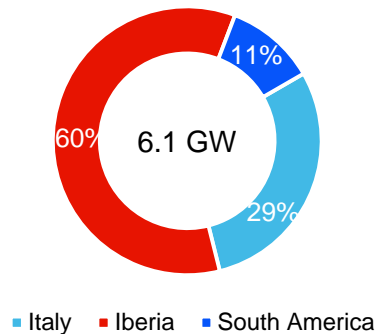
Capacity strategy: focus on coal



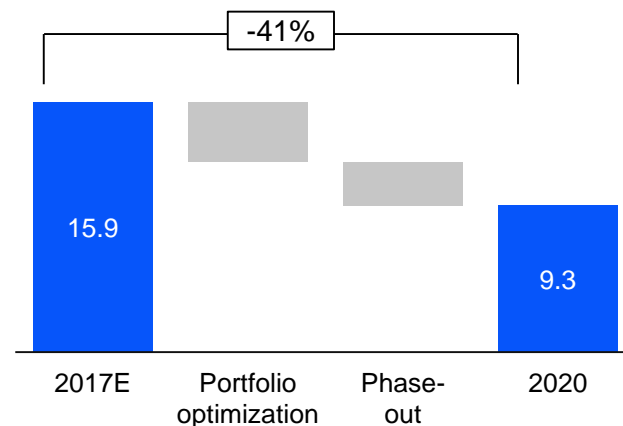
2018-20 environmental capex



Capacity covered by environmental upgrade¹



Coal fleet evolution (GW)



Relevant role in the Group mix decarbonization

¹On the total thermal capacity

Capital Markets Day – Global thermal generation

Environmental performance



New challenges @2020

CO₂
Base year 2007



Thermal Gen.



NO_x
Base year 2010



SO₂
Base year 2010



Particulates
Base year 2010



Worldwide deployment of best environmental practices

Emissions' levels improvement through environmental investments

Phasing out of 6.5 GW of coal plants by 2020

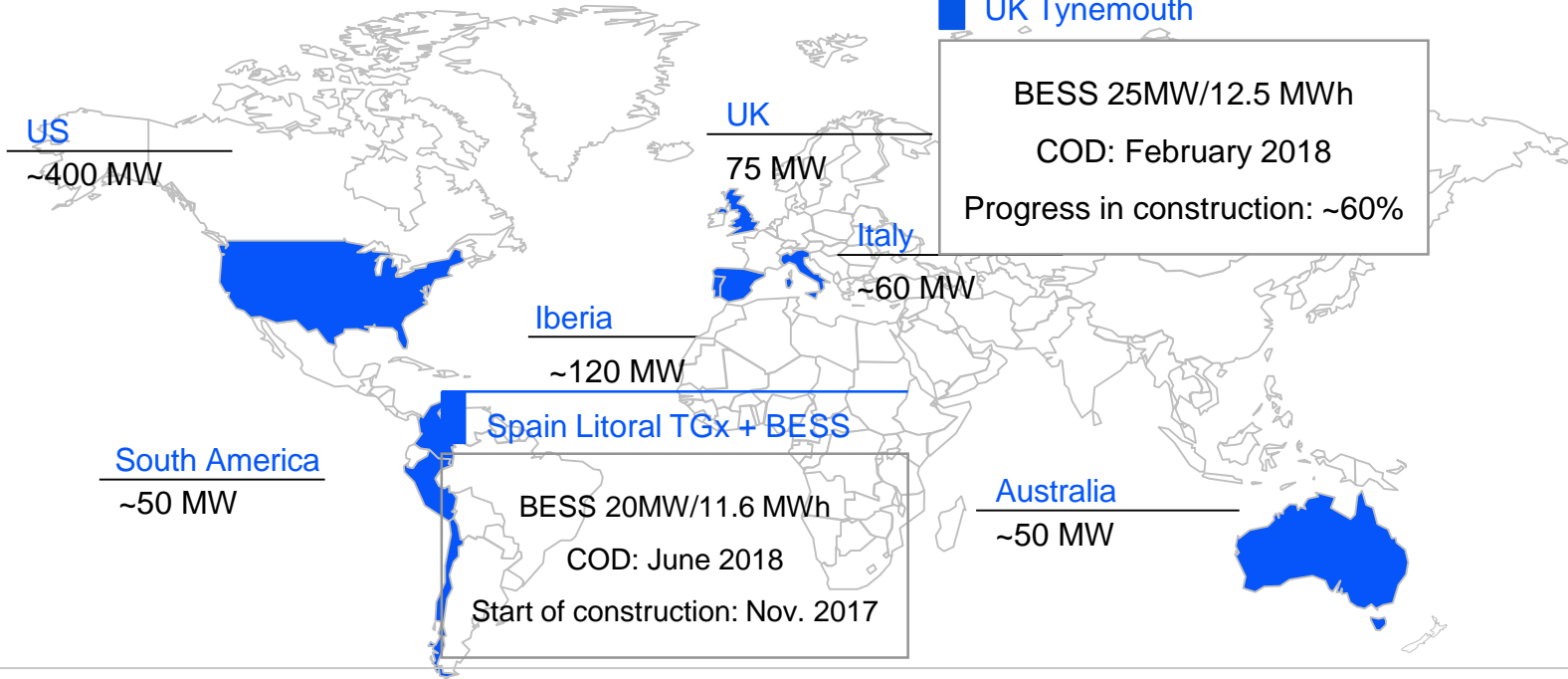
Relevant contribution to group commitments

Environmental footprint improvement as a driver for the industrial strategy

Capital Markets Day – Global thermal generation



Energy storage development: utility scale BESS¹



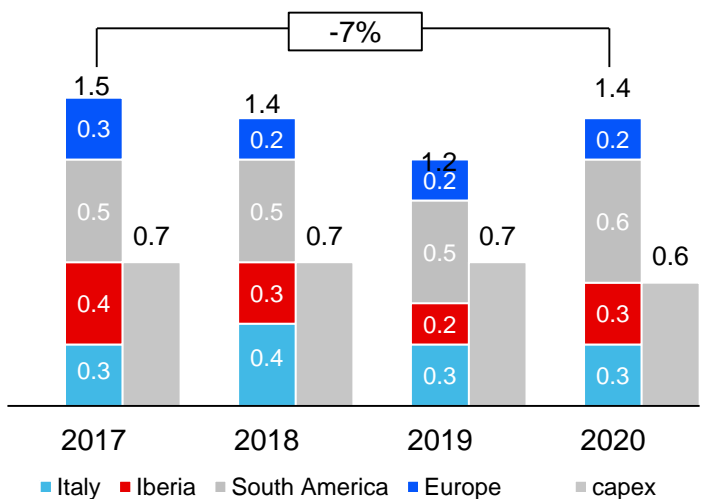
>750 MW of projects under development, 350 MW by 2020

Capital Markets Day – Global thermal generation

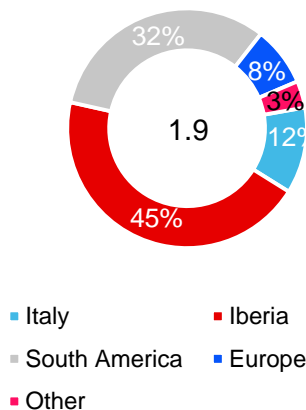
Financial targets¹



EBITDA² by geography and capex 2017-20 (€bn)



Capex by geography 2018-20 (€bn)



Key trends

Resilience to worsening scenario

Decommissioning program in Italy reduces spending

Investment focalized in environmental improvement and selective growth

Margins sustained by increasing asset availability, digitalization and new business model (BESS)

All investments sustained by internal profitability

1. Excluding nuclear and trading
2. Excluding gas Swap in Italy