

revolution energy

Italian market trends and scenarios

Large-scale solar:
an update from Italy

Virginia Canazza

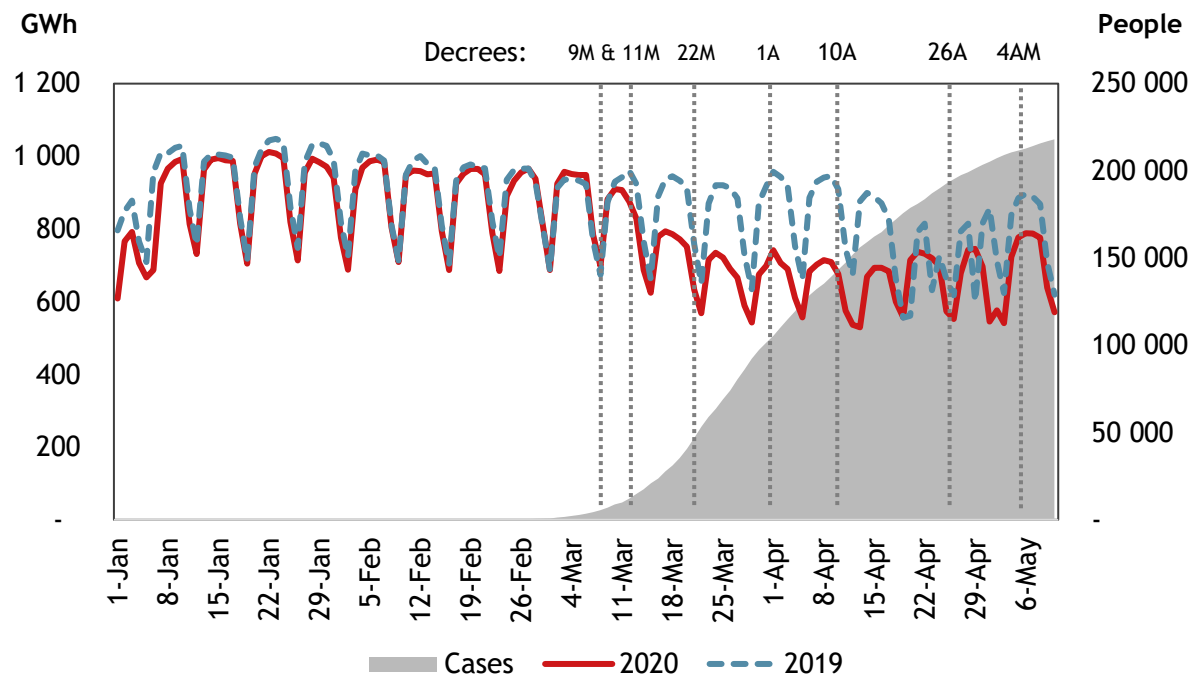
May 2020



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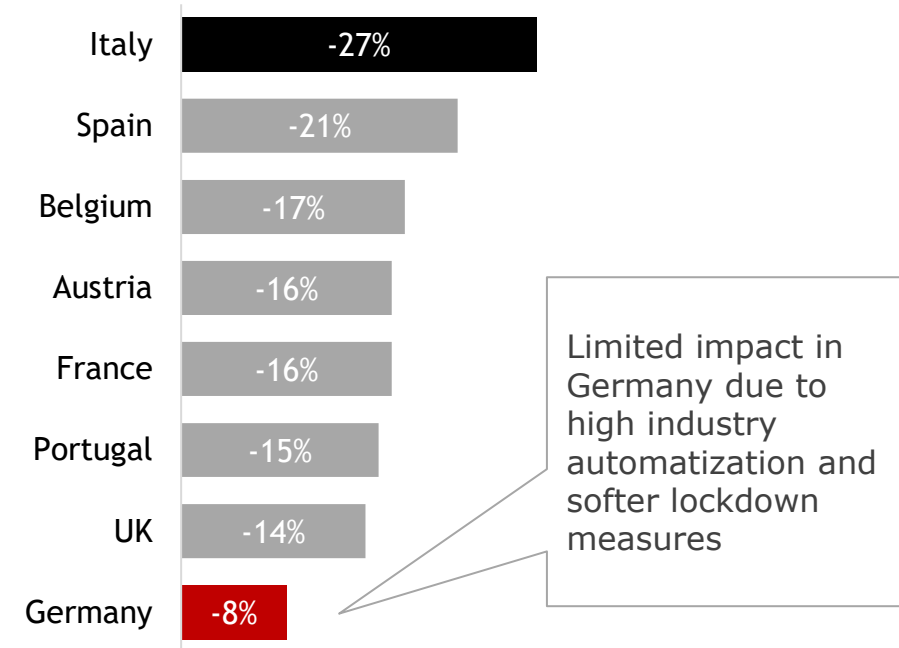
COVID19 impact on Italian electricity demand: -18-20% due to restrictive measures on industrial and commercial activities and strict boundaries to travel

Electricity demand and Covid-19 positive cases in Italy



Source: REF-E elaboration on EU Open data and Terna data

Change in peak demand on April 8th, 2020 vs to 2019* [%]

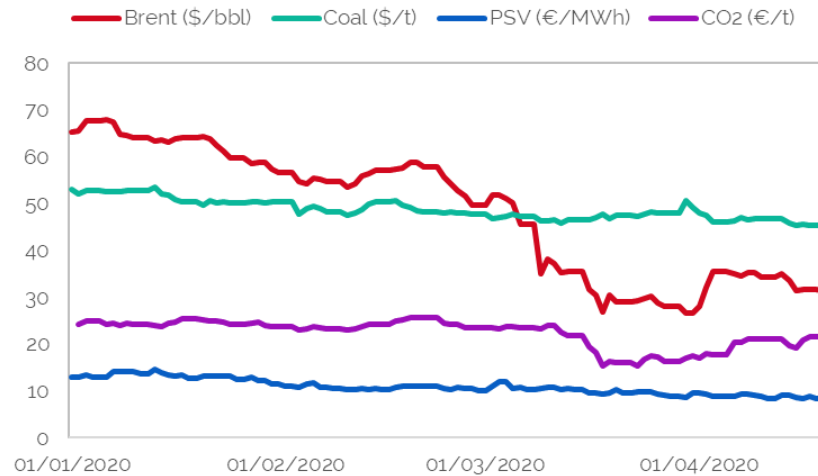


*Average peak hours demand of April 8^o 2020 compared to April 10^o 2019., adjusted through temperature difference

Source: REF-E elaboration on ENTSO-E and Bruegel data

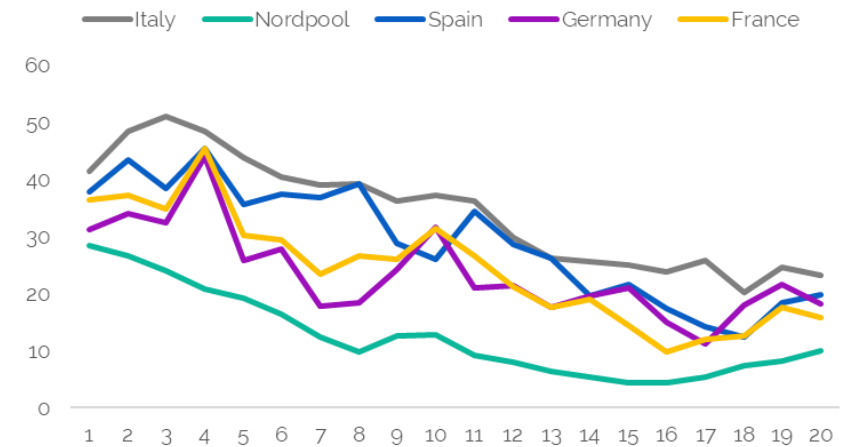
COVID19 impact on commodities: historical lows

Trend in the daily price of commodities in 2020



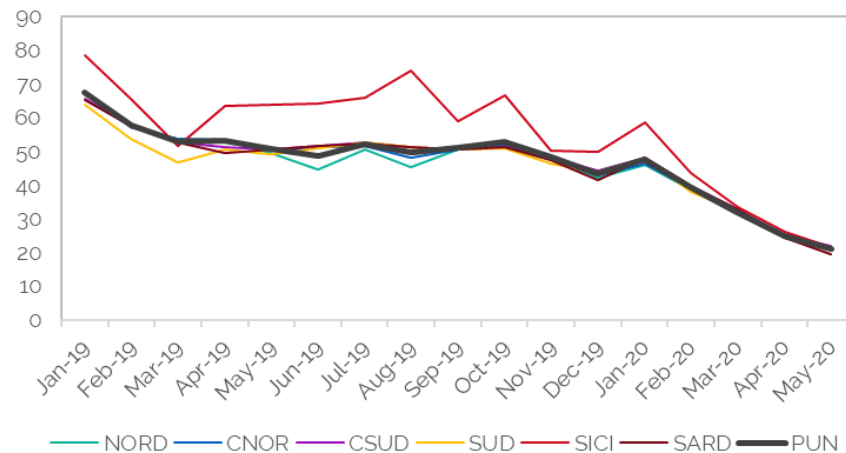
Source: REF-E elaboration on Reuters data

Weekly DAM Electricity Prices in Europe in 2020 [€/MWh]



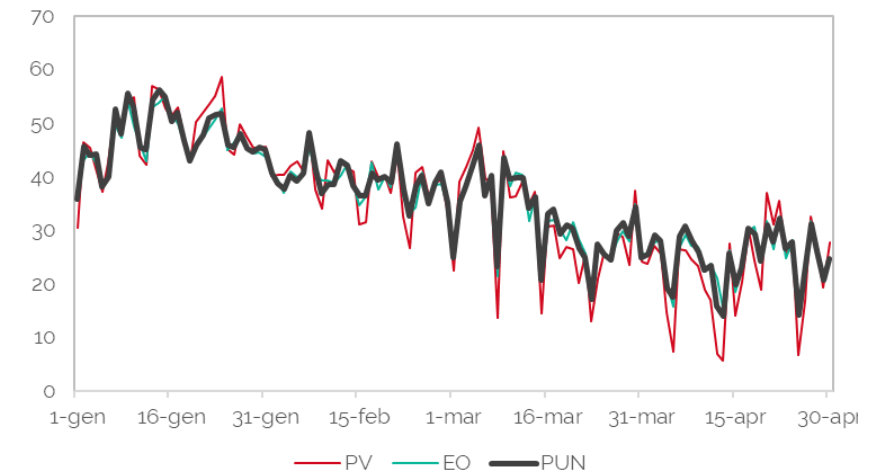
Source: REF-E elaboration on GME data

Monthly PUN and Zonal Prices since 2019 [€/MWh]



Source: REF-E elaboration on GME data

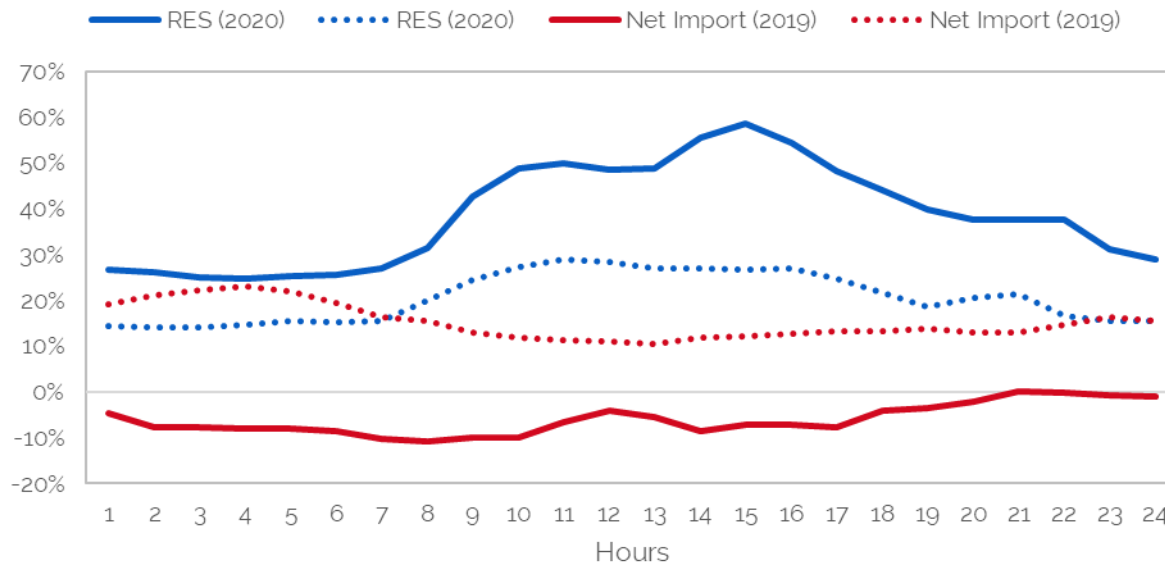
Daily Captured prices in 2020 [€/MWh]



Source: REF-E elaboration on GME and Terna data

Low demand levels and increasing non-programmable RES-E: increase ASM relevance

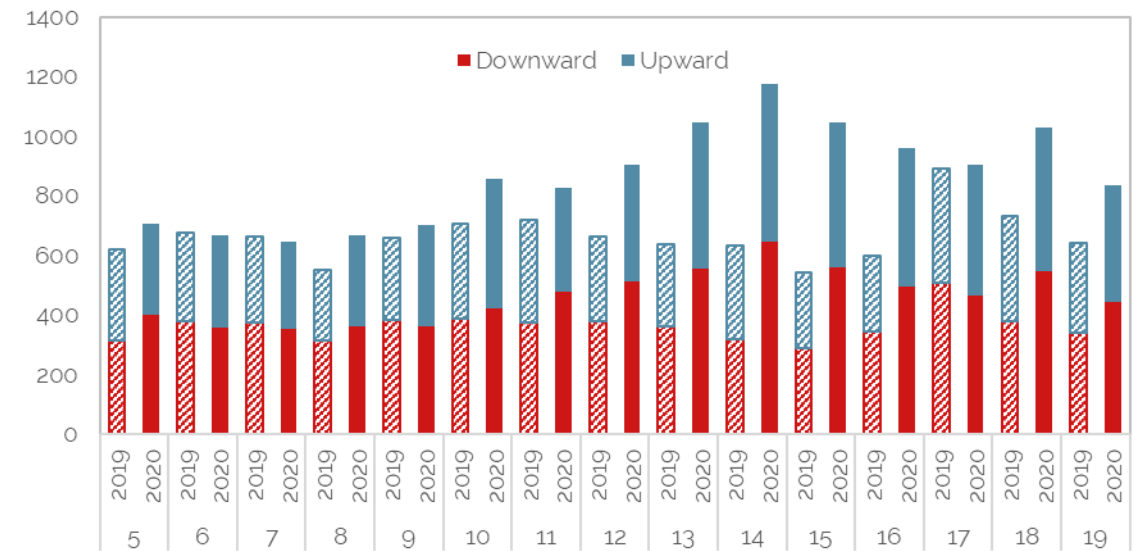
Hourly Share of RES-E and Net Imports over Demand* [%]



*Comparison between second Sunday of April (14/04/2019 and 12/04/2020)

Source: REF-E elaboration on Terna data

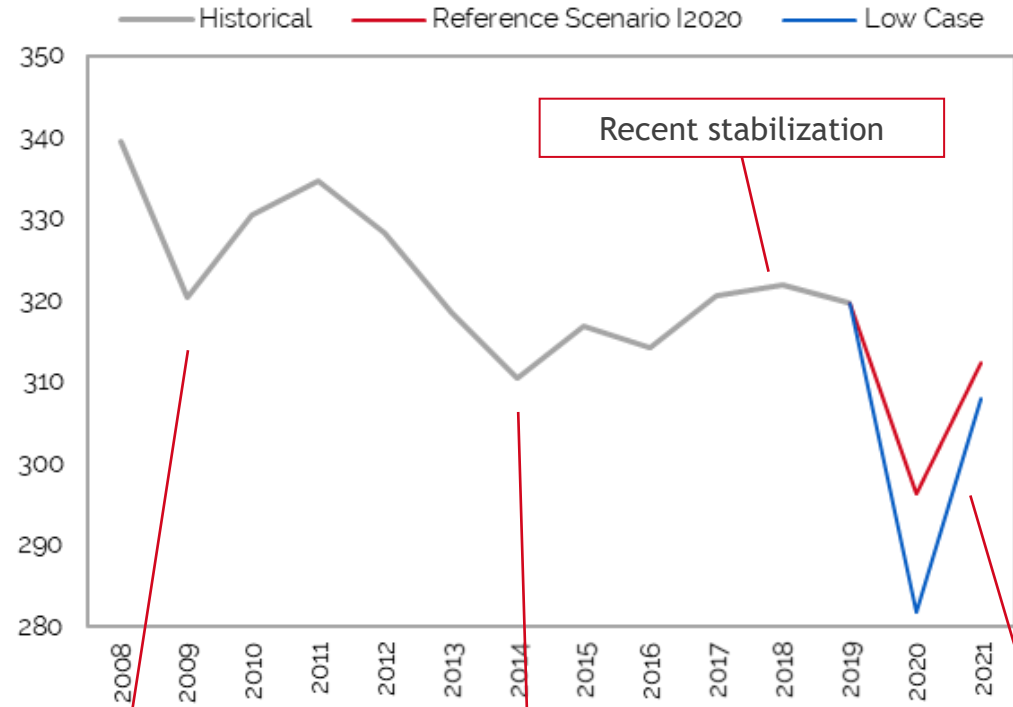
Exchanged Volumes on ASM Ex-Ante and BM Phases [GWh]



Source: REF-E elaboration on GME data

Electricity demand follows GDP drop, with partial recovery in 2021

Italian Demand [TWh]



Source: REF-E elaborations and ISTAT data

Financial crisis
2009

2014 economic crisis,
lowest level so far

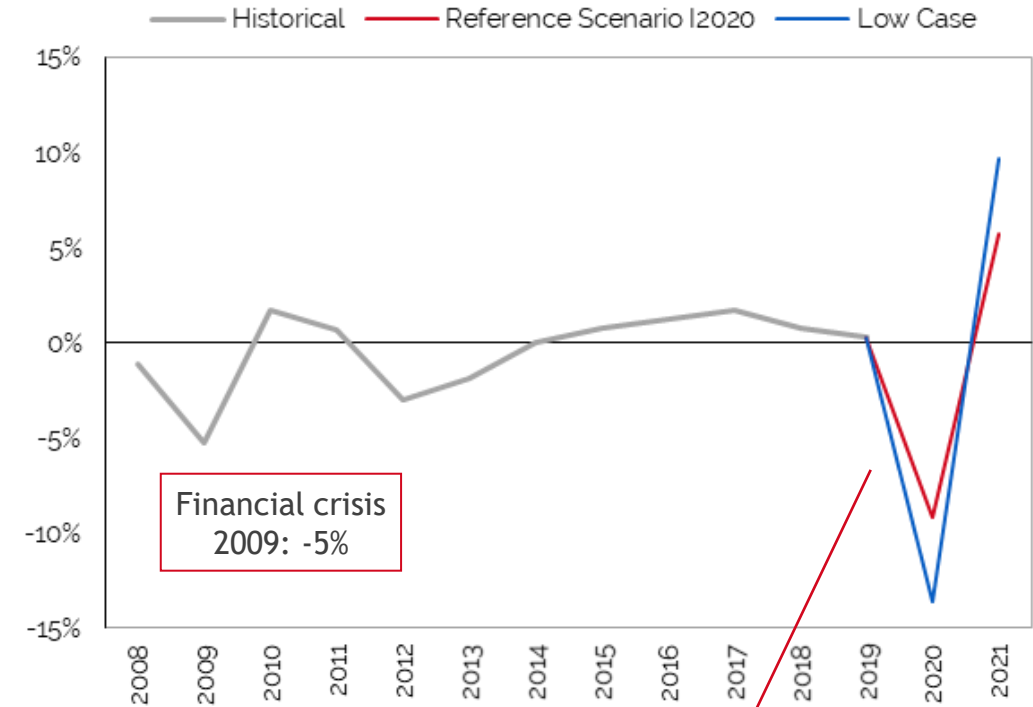
Impact of Covid19
Reference Scenario:

- -7% in 2020
- +5% in 2021

Impact of Covid19
Low Case:

- -12% in 2020
- +9% in 2021

Italian GDP [%]



Source: REF-E elaborations and ISTAT data

Financial crisis
2009: -5%

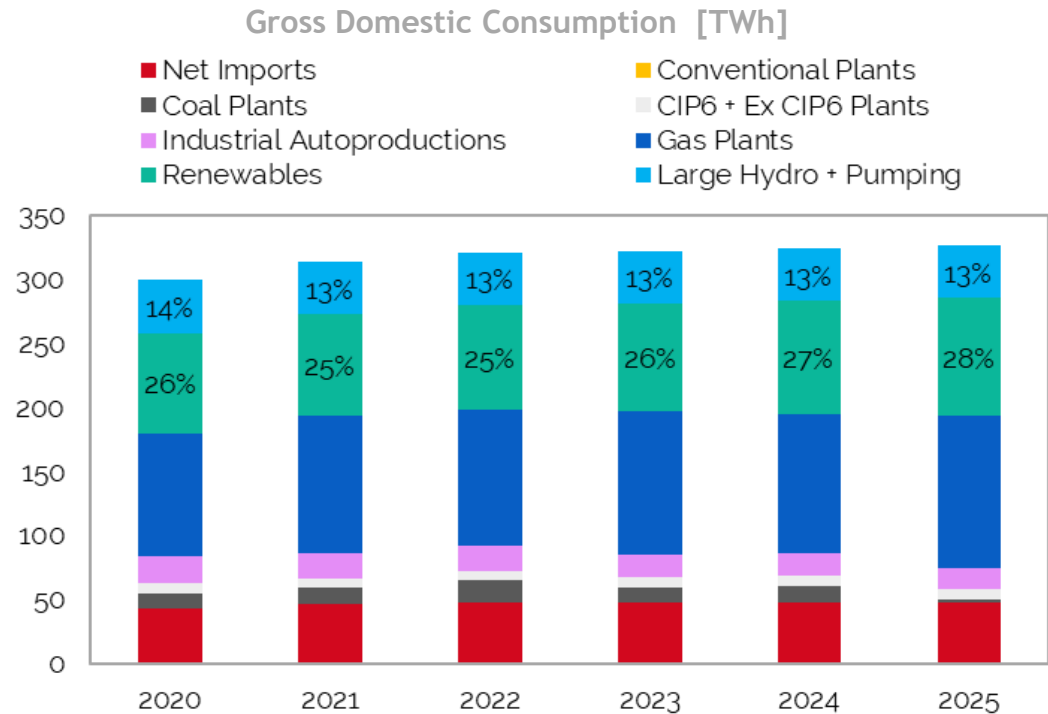
Impact of Covid19
Reference Scenario:

- -9% in 2020
- +6% in 2021

Impact of Covid19
Low Case:

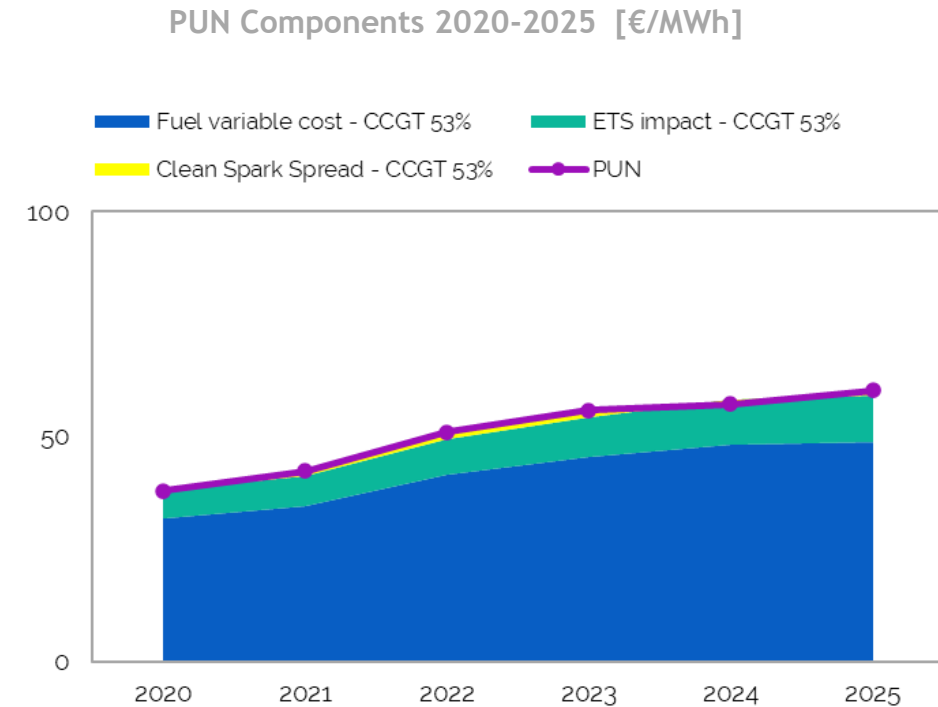
- -14% in 2020
- +10% in 2021

Overall RES-E contribution on GDC estimated to increase from 35% in 2019 and stabilize around 40% in the 2020-2025 period



Source: REF-E Reference Scenario I2020, data gross of pumping storage consumption

Gas-fired units and renewable sources at the backbone of the Italian Gross Domestic Consumption

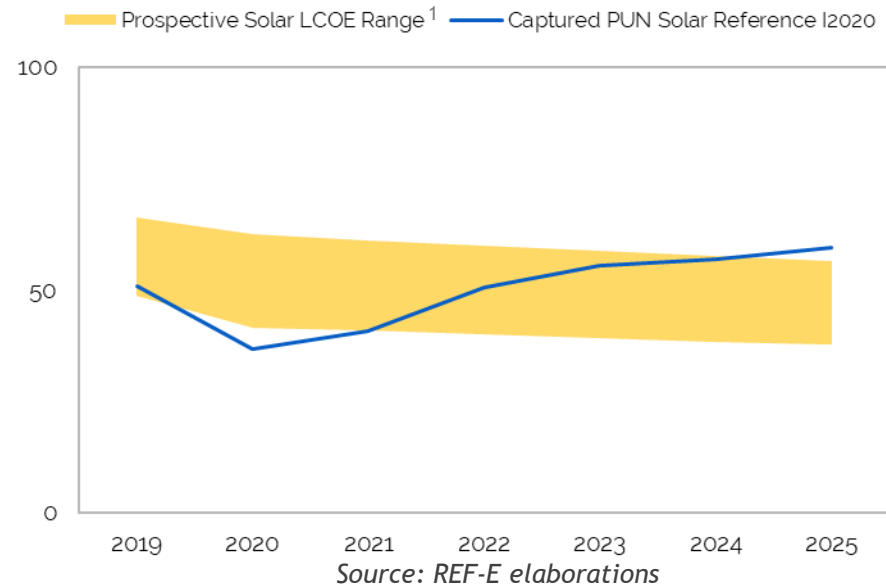


Source: REF-E Reference Scenario I2020

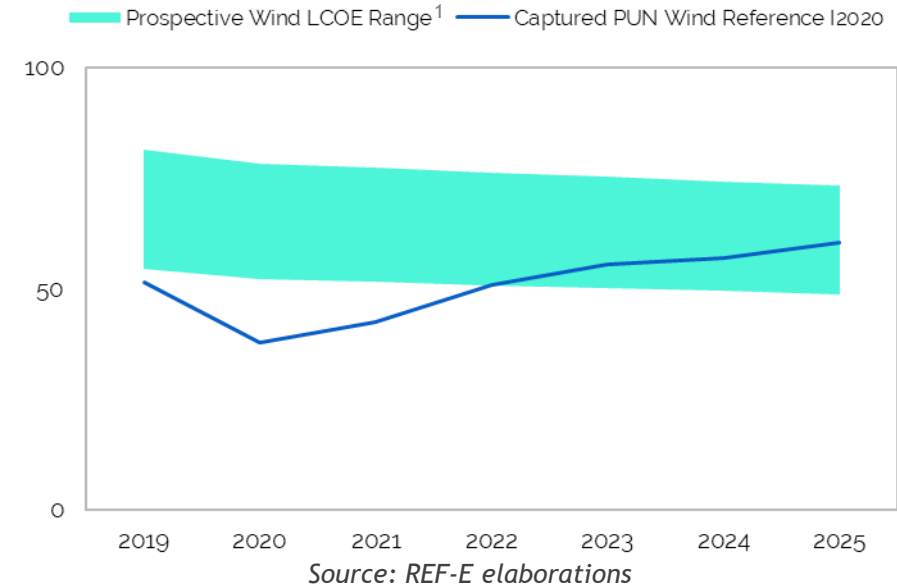
High level of competitiveness on DAM

The consolidation of market parity is strictly related to commodity trends

Prospective LCOE Solar vs PUN captured [€/MWh]



Prospective LCOE Wind vs PUN captured [€/MWh]



Factors that can undermine LCOE reduction

- **Supply chain risks:** the lockdown affects the activities of renewable manufacturers and O&M performers
- **Changed risk appetite:** investors and lenders are delaying new investments

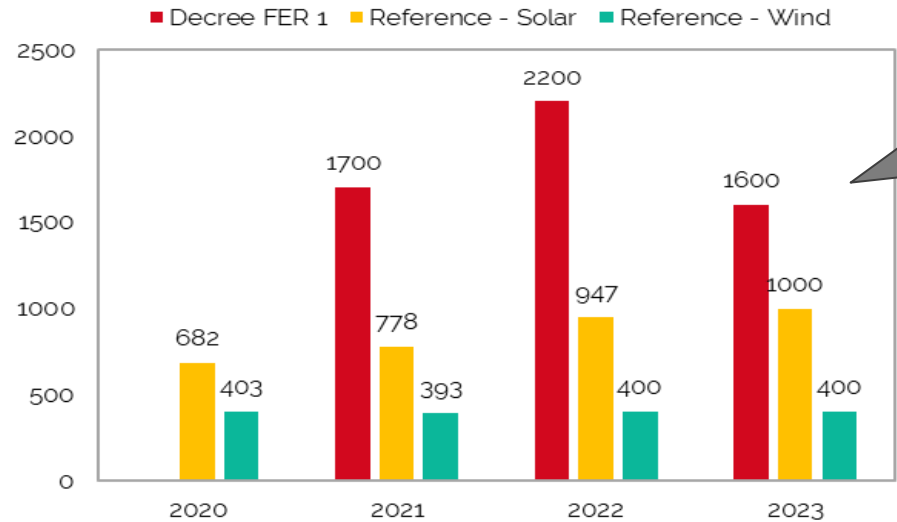


The reduction of sales for technology/O&M providers may have implications on CAPEX/OPEX costs in the next years

¹ 2019 and 2020 estimates based on the results of a survey among sector operators, prospective evolution of costs based on DEA-Energinet data. The range reflects the variability of CAPEX, OPEX, load factor and discount rate

New projects could become available in the post-Covid19 recovery period

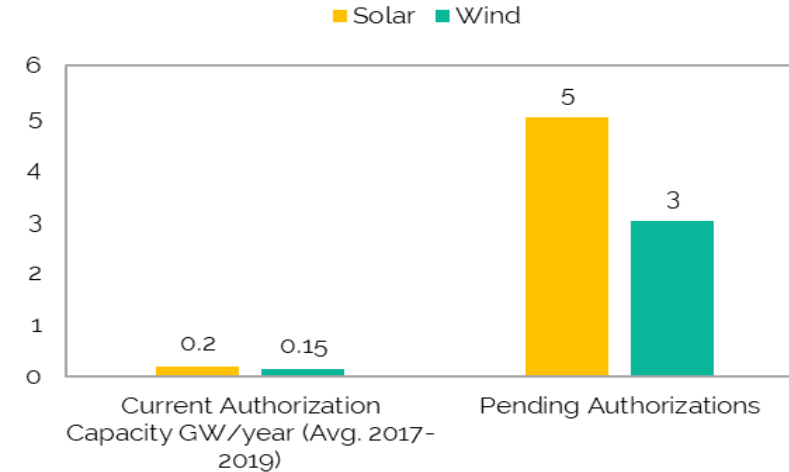
Renewables Growth 2020-2023 [MW]



2021-2023: growth led by FER1 Decree under the hypothesis of a progressive increase in availability of authorized projects

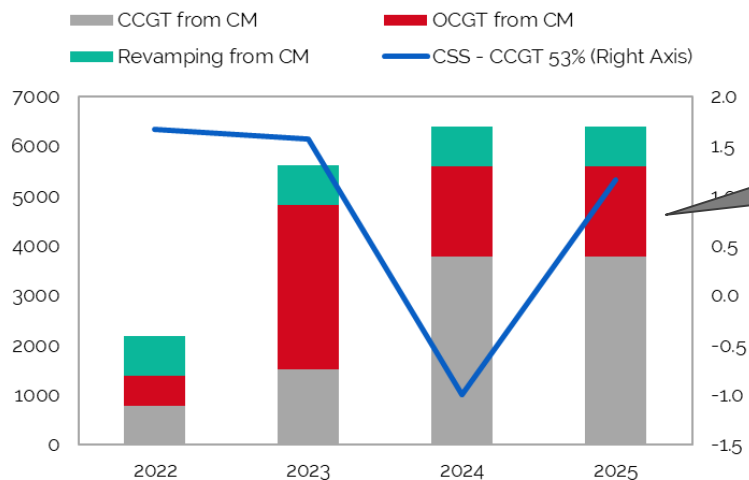
Source: REF-E Reference Scenario I2020, FER1 data

Authorization RES-E capacity vs Projects Pipeline [GW]



Source: publicly available data

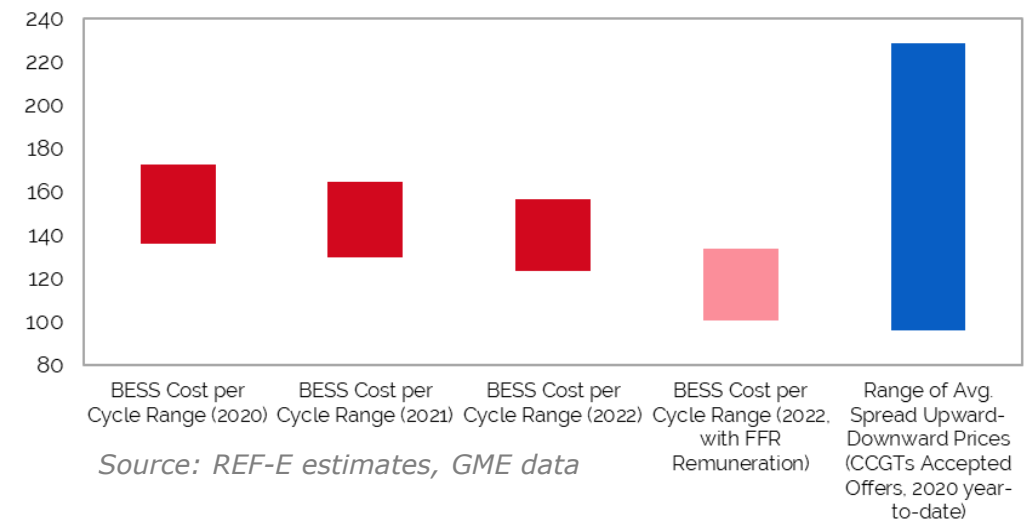
Thermal Capacity from Capacity Market [MW] vs CSS [€/MWh]



Deadlines extensions and repair auctions could be necessary

Source: REF-E Reference Scenario I2020

Upward-Downward ASM Price Spread vs BESS CpC* [€/MWh]



Source: REF-E estimates, GME data

Key remarks: renewables will play a key role in the post-Covid19 recovery

- In the short-term (2020-2021) renewables are challenged by market fundamentals jeopardizing market parity
- Renewable economic outlook can be confirmed positive in the mid-term (from 2021-2022) although the successful RES-E development could be strongly influenced by how the post-recovery strategy will be designed at EU level
- It is now time to focus on renewable authorization processes in order to boost development potential once the market will recover following the Covid19 crisis
- The PPA market could benefit in the mid term from policy measures addressing market and credit risk which would have been proven to be unsustainable in a not predictable crisis scenario as Covid19 experience

Note: All prices are in real terms. Forecasts are updated at the beginning of April 2020



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