

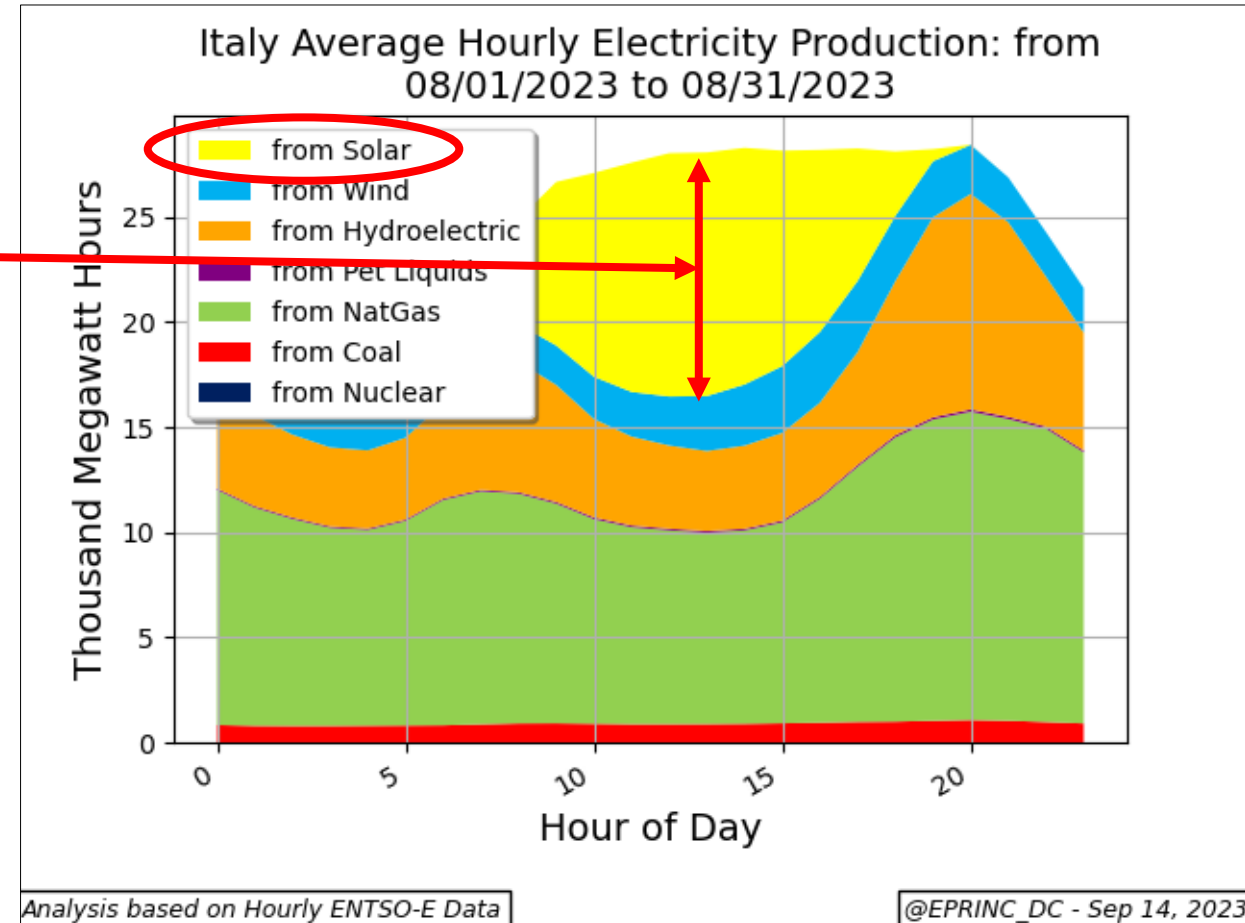
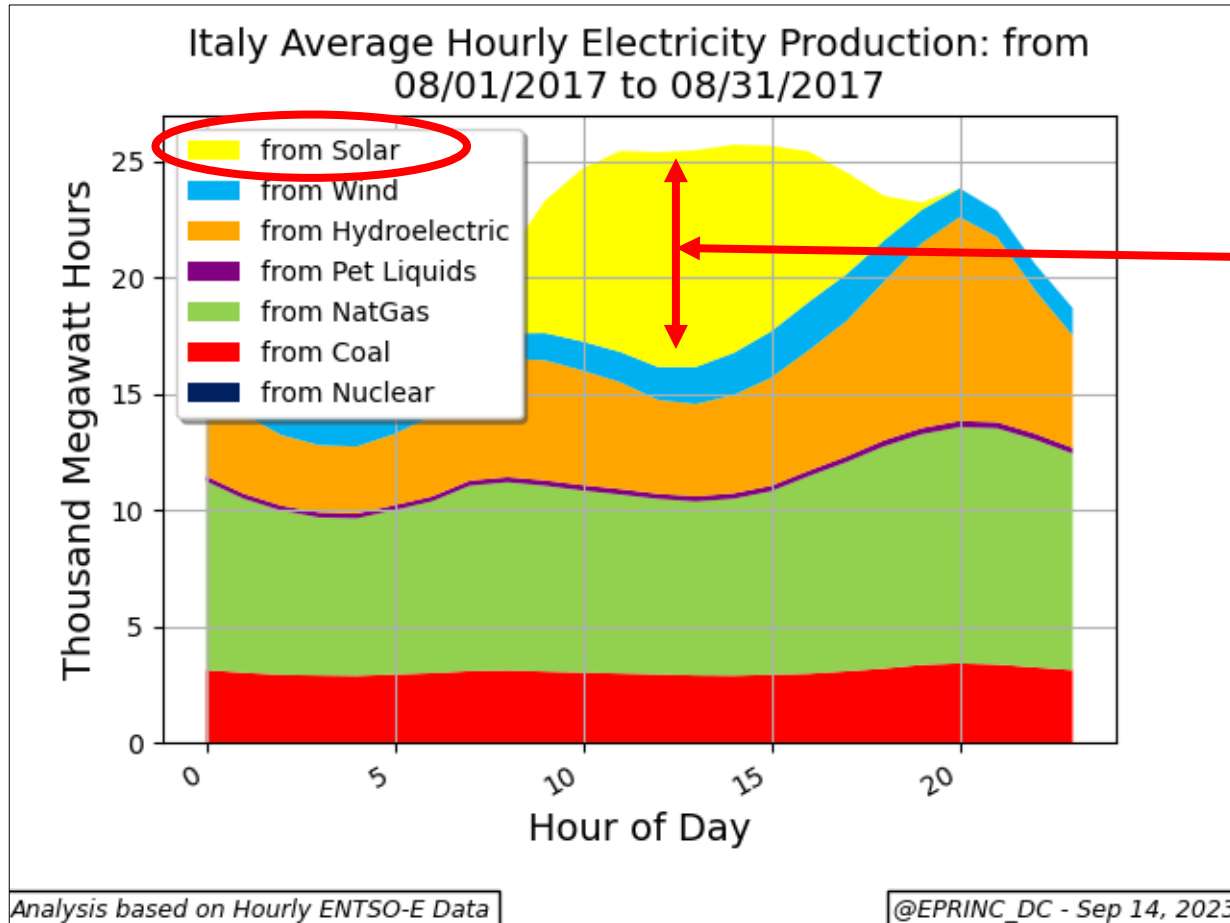
Chart of the Week #2023-35

The Italian Duck Curve: Evolution of Italy's August Electricity Generation Resource Mix — 2017-2023



Max Pyziur
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Washington, DC

The Italian Duck Curve: Evolution of Italy's August Electricity Generation Resource Mix — 2017-2023



The Italian Duck Curve: Evolution of Spain's August Electricity Generation Resource Mix — 2017-2023

- Increasing reliance on the generation from utility-scale solar photovoltaic systems by state-level and national grids has resulted in a phenomenon known as the "Duck Curve."
- The Duck Curve designation was first noticeable and applied to the phenomenon in California. During peak midday summer generation, a distinctive bulge was graphed by solar electricity production that strongly displaced generation from other sources such as natural gas.
- With the increasing generation of solar electricity in countries such as Italy, the Duck Curve phenomenon can be seen there also.
- With the drop off in solar generation in the late afternoon and the increase in evening power demand, other generating resources are required to accommodate demand. During August 2023, Spain's grid required a ramp (increase in generation) of almost 10 thousand megawatts (MWs) from 2pm to 8pm (28 MWs per minute).
- Italy relies on a combination of natural gas and hydroelectric generation that can quickly and reliably meet this load.
- This slide deck is available at: <https://eprinc.org/chart-of-the-week/>
- For more information on this chart, please contact Max Pyziur (maxp@eprinc.org).