Grid Modernization

AEG Chicago Stakeholder Challenge

August 12, 2021

Despite ambition level to be carbon free by 2030, grid modernization faces headwinds

Uncertainty and inflexibility in incentive structures do not adequately support long-term renewable investment

Uncertainty around funding outlook for Illinois Long Term Renewable Resources Procurement Plan

- Funding must match expenditure period, with timeline estimated based on anticipated project delivery dates
- IPA REC contract permits up to 12-month extension to COD, however **>1,000 extension requests received in 2020**
- **Project delays trigger possibility of lack of available funding when project is finally energized**

No programs to support development of energy storage

- Structured procurement for storage + stand-alone storage ITC can ensure that trigger **storage at scale and expensive grid upgrades potentially deferred**

Grid backlog and COVID lockdowns delaying projects, requiring extensions

PJM and MISO queues currently face GWs worth of projects to study and process

- **Average delay of 1.5 to 2 years beyond original COD** due to interconnection delays

New projects face high upgrade costs not finalized until late in the queue process

COVID further delayed construction timelines as construction labor availability challenged

Local policies at odds with state and federal goals, with opposition increasing

Even historically supportive regions now resistant to new project development

- Where wind projects have been developed in the past, new solar / storage projects facing opposition
- Political divisions positioning renewables as a “left” issue rather than a bipartisan topic

Resistance independent of fossil fuel penetration

- Benefits to region not readily apparent and perceived to be for Chicago’s benefit at the expense of the region

Growing pressure to direct benefits to impacted communities

An uncertain funding environment ultimately hinders Illinois' ability to realize the full potential of new energy innovation

- **Longer time horizon for new energy growth as companies await clarity on project viability**
  - Persistence of fossil-fuel generation and prolonged air pollution
- **With no explicit storage incentive program, slower adoption of stand-alone storage projects needed to stabilize and enable grid resiliency**
- **Inability to commit to hiring, local community support without project certainty**
- **Slow, piecemeal investment in PJM and MISO implemented largely at a project-level**
- **Inability to cost-effectively deploy energy innovations such as green hydrogen that rely on renewable production at scale**

Summary

Regarding grid modernization, to achieve Chicago's and Illinois' carbon and equity goals to be carbon-free by 2030, the most critical obstacle to overcome is

Lack of alignment that a stable, long-term funding commitment for new energy in Illinois is key to driving investment across new energy technologies

Creating a funded long-term procurement plan provides a stable backdrop for new energy investment to order to address local issues and enact the much-needed grid reform required to successfully meet new energy goals in the long term

A premier renewables player, RWE is well positioned for the new energy world, with decarbonization at the heart of its strategy

GW installed Wind + Solar

GW target installed Wind + Solar by **2022**

GW developed **in the US** since 2007

globally in **wind & solar generation**

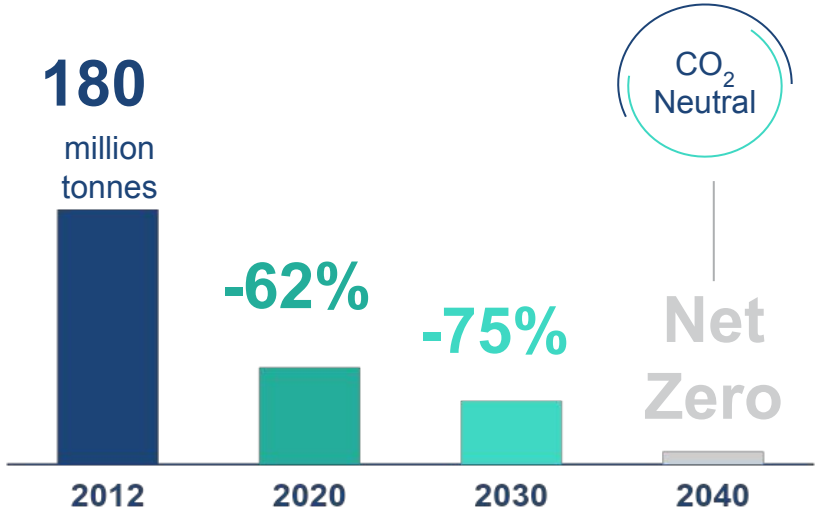
in **wind & solar** in **Europe**

globally in **offshore wind**

Target to achieve **CO_2 neutrality** for our global generation portfolio by **2040**

Fully aligned with **Paris Agreement**

Proven **track record** of carbon emission reductions



Note: Pro rata installed capacity, excluding China. Figures as of 31 Dec 2020