Record year for negative prices pushes Dutch solar to brink

Soaring curtailment, subsidy losses and collapsing capture rates are hammering returns, writes **Karolin Schaps**

The business case for Dutch solar farms is drastically worsening as price cannibalisation takes hold.

With more than 28GW of solar PV capacity now installed in the Netherlands, intraday power prices regularly dip below zero during sun-filled spring and summer months. Dutch solar farms often flood the electricity market during the middle of the day, weighing on power prices.

By the end of May, Dutch hourly electricity prices had turned negative 281 times this year, compared with 166 times at the same point last year, according to data analysed by Kyos, setting 2025 up to become a record-breaking year for negative prices.

Solar farm owners are responding to negative prices by curtailing production. Dutch rules stipulate that renewable energy producers will not receive subsidy payments if prices are negative for periods of six hours or more (for projects which qualified for subsidy payments in 2016-22) or for one hour or more (for projects which qualified for subsidy after 2023).

Therefore, switching off solar farms has become the norm during times of overproduction to cut losses.

Figures provided by national energy data platform NED shows that in the second quarter of this year, renewable energy curtailment, which also includes wind farms, rose to 2.3TWh, up from 1.3TWh a year earlier.

The combination of more frequent negative prices and curtailment has brought Dutch solar capture rates – the ratio at which solar plants are selling their electricity compared with the market price – to an all-time low of 55.8%, according to Kyos. In comparison, Dutch offshore wind capture rates are assessed at 90.5%.

CHALLENGING OUTLOOK: Rabobank's Sanne de Boer Photo: Rabobank

FIELDING QUESTIONS: The Zevent solar farm Photo: Powerfield

"Many solar asset owners are navigating challenging times. Today's capture rates underline a simple truth: batteries are no longer a bonus. At this moment they are becoming essential to making solar projects viable," said Rick Bitter, director at renewable energy supplier Vandebron.

Some operators curtail their assets more aggressively than others to achieve higher capture rates, he added. Vandebron advises its own clients – owners of renewable energy projects – to optimise solar farm operations by not focusing on produced volume only but by adjusting how and when assets are producing, Bitter said.

As the business case for solar farms is worsening and with negative prices here to stay in the short term, concerns are growing that the Netherlands might not reach its 2030 installed solar capacity target of 59.3GW.

"The revenue profile for solar is becoming more unpredictable, which is challenging. This is one of the reasons why it's becoming more difficult to develop new solar parks in the Netherlands," said Sanne de Boer, energy transition analyst at Rabobank.

The decline in revenues could result in some solar projects breaching debt ratio levels agreed under lending terms, as well as creating difficulties in meeting interest and repayment obligations, said analysts at KPMG in a recent report on renewable energy projects.

Financiers are likely becoming more selective in which projects they support, said Bitter, adding to developers' woes.

To continue growing the share of solar in the Dutch electricity mix, the economics for solar farms need to improve beyond operators just covering their operational expenses, said Hans van Cleef, MD at research agency EqoLibrium. ■

Co-located storage slow to catch on

On paper, the Netherlands has one of the most attractive electricity markets in Europe for battery energy storage systems (BESS) due to the large swings in prices brought on by the high amount of intermittent renewable energy production.

But in practice, the uptake of BESS, including co-locating batteries at solar and wind farms, remains low due to a mixture of regulatory and practical hurdles.

"Despite the opportunities that BESS offers for reducing the impact of negative prices and profile costs, the development of co-located BESS is lagging behind expectations," said analysts at KPMG in a recent report published on behalf of solar association Holland Solar.

The advisory highlights the lack of physical space for battery locations, a lack of policy from the government and varying permitting processes.

Dutch grid operator TenneT forecasts 4.9GW of BESS capacity in the Netherlands by 2030, of which 2GW will be co-located capacity at solar farms. ■