

EUROPEAN SCHEME IS IN FREE FALL

Record-low **CARBON PRICE** threatens to derail transition away from fossil fuels and ability to meet climate-change targets

ALEX SCOTT, C&EN LONDON

THE EUROPEAN UNION carbon emissions trading scheme—the biggest in the world and the heart of Europe’s climate-change program—is in dire straits. The scheme’s carbon price has collapsed. The primary reason: The economic recession has suppressed manufacturing, thereby reducing emissions and creating a huge oversupply of carbon emissions allowances.

Carbon trading is a market approach to reducing greenhouse gas emissions in which each facility involved is given an emissions cap for the year, and each year that cap is reduced. A firm must record and report its facilities’ emissions and must obtain allowances for its total emissions. An allowance permits a facility to emit 1 metric ton of carbon dioxide or its carbon equivalent; some allowances are given for free by the government, others can be bought at auction or from other firms.

If a facility exceeds its cap, the company operating it has options: It can reduce emissions, buy allowances from other companies, or obtain allowance offsets by reducing emissions at another pollution source. The cost of an allowance is referred to as the carbon price and is driven by market conditions such as supply and demand.

If the low carbon price continues, the region’s ability to meet long-term reduction targets for greenhouse gas emissions will be severely hampered because the trading scheme will fail to provide money for cleantech programs and incentive for manufacturers to adopt cleaner technologies.

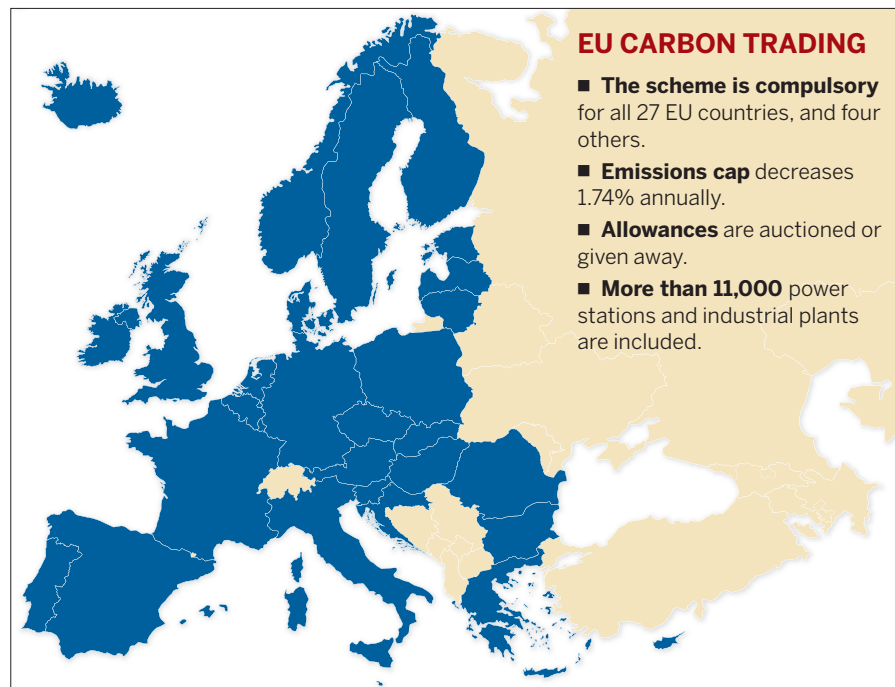
The trading scheme is a key component of the EU’s climate-change strategy because about 40% of all greenhouse gases emitted in the region fall under EU’s control. The mandatory scheme applies to 11,000 industrial installations, including power plants and major chemical facilities, across

all 27 member states, as well as in Croatia, Iceland, Liechtenstein, and Norway. The aviation sector has been included in the scheme, but its active participation has been deferred to allow for an international agreement on aviation emissions, which is expected to be concluded in the fall.

The goal of the European Commission,

each metric ton allowance of CO₂, down from a high of \$23 in 2011. This is despite an annual reduction of the EU emissions cap of 1.74% through 2020 and the introduction on Jan. 1 of a new phase of the scheme requiring companies to purchase allowances.

AT ITS CURRENT carbon price, the EU emission scheme’s role in encouraging chemical firms to ditch fossil fuels and adopt greener technologies “is meaningless,” says André Veneman, director of sustainability at AkzoNobel. Many of the industry’s investments in low-carbon technologies that are marginally financially viable also will likely be delayed, he says. Without a strong carbon price, the underlying push to cleantech in the EU will come only from the price of oil, Veneman adds.



the EU’s administrative body and the architect of the emissions trading scheme, is to reduce all greenhouse gas emissions by 20% from 1990 levels by 2020. To contribute toward this goal, the trading scheme has targeted a 21% cut in the emissions of participating sectors by 2020 from a 2005 baseline.

In recent weeks, however, the EU carbon price dropped to a new low of \$5.20 for

Veneman and other experts say that a carbon price of between \$68 and \$135 is required if industry as a whole is to be forced to shift onto a new low-carbon footing.

Yvo de Boer, special global adviser for climate change and sustainability for KPMG—an audit, tax, and advisory firm—and former executive secretary for the United Nations Framework Conven-

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tion on Climate Change, is pushing for a much higher price of about \$200 per allowance. “That’s the kind of level that drives the price signals that we really need,” de Boer recently told EurActiv, an EU policy website.

Analysts agree that the primary reason for the EU’s low carbon price is the economic recession, which has suppressed demand for emissions allowances because production is down, thus manufacturers’ emissions are too.

A secondary reason for the low carbon price is the high number of “generous” exemptions for the scheme handed out to energy-intensive industries, says Marcus Ferdinand, senior market analyst for Thomson Reuters Point Carbon, a carbon market information provider. In 2013, just over 50% of the 2.1 billion metric tons of allowances provided by the EU will be sold through auctions with the remainder due to be allocated free of charge.

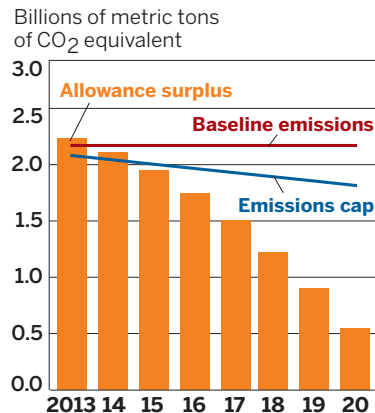
Emissions credits generated from the worldwide implementation of cleantech projects agreed to under the Kyoto protocol also can be sold on the EU emissions trading market and have added further to the market’s oversupply.

A RECENT REPORT by ECN, an independent Dutch energy research organization, forecasts that without intervention this situation will result in zero emissions reduction from the trading scheme until at least 2020. This lack of reduction is because the oversupply of allowances is projected to last through 2025. The market is on course to have a surplus of 2.2 billion allowances in 2013, equivalent to a full year of emissions by industry, ECN states.

For its part, the commission in a recent report accepts that the allowance surplus

ALLOWANCE OVERLOAD

Assuming constant baseline greenhouse gas emissions, lowering the cap on emissions is expected to reduce, but not eliminate, the allowance surplus.



SOURCE: ECN

“in the longer term could affect the ability of the EU emissions trading scheme to meet more demanding emission reduction targets cost-effectively.”

There are already signs that the low carbon price is having an impact on the functioning of the trading scheme. The German government withdrew 4 million allowances from an auction on Jan. 18 because they failed to meet the reserve price. With the drivers for oversupply showing no signs of abatement, analysts expect more of these auctions to fail.

The commission had planned to generate billions of dollars by auctioning carbon allowances and then reinvest the money to subsidize cleantech development programs including renewable energy proj-

ects. As a consequence of the low price, the available funds are now far smaller than expected, and the scale and number of projects funded has dropped.

To bump up the price of carbon, the commission has proposed to postpone—or backload—until 2019 or 2020 some 900 million emissions allowances originally tagged for distribution from 2013 to 2015. “It seems that the commission is trying to save the market from falling apart,” Ferdinand says.

THE CATCH IS that to start backloading the commission must first gain legal approval from both the European Council, which represents all of the governments of EU member states, and the European Parliament. That won’t be easy because a small number of EU countries, led by Poland, are enjoying the low carbon price and are resisting the commission’s proposal. Poland is the world’s 10th-largest consumer of coal—the fuel that generates the most carbon emissions—and is even considering building new coal-fired power stations.

Investment by the EU to help Poland transition to a more sustainable energy mix could be money well spent both environmentally and politically, according to de Boer. But time is running out, and on Feb. 19 a leading committee within the European Parliament will vote on whether to allow backloading.

“It’s make-or-break day, as the following policy process is very much dependent on the outcome of that vote,” Ferdinand says. If the lawmakers reject backloading, the price of carbon will languish between \$5.40 and \$6.70 per metric ton, he says. However, in the unlikely event that the vote goes the commission’s way, he adds, the price would go slightly higher.

Not everyone is unhappy with the way

TRENDING DOWNWARD The price of carbon allowances in the EU system has fallen steadily.



a Prices are through Feb. 6. SOURCE: Thomson Reuters Point Carbon

“We still need a significantly higher carbon price before there is a mainstream shift to renewables.”

things are turning out. The current situation suits the European Chemical Industry Council (CEFIC), Europe's main chemical industry association. Three years ago CEFIC was warning that the EU emissions trading scheme was the single biggest threat to the competitiveness of the region's chemical industry. That threat has fallen, the group notes, in line with the price of carbon.

“Although the price is lower, it is still a cost that does not exist outside the EU,” says Peter Botschek, director of energy for CEFIC. The EU's unilateral emissions trading scheme is anticompetitive and a high carbon price would drive manufacturing out of the region, he says. But even if backloading takes place, there are so many flaws in the market that it would “hardly have an impact,” Botschek adds. A global emissions trading scheme, on the other hand, would be acceptable to the EU chemical industry, he says.

But a range of experts outside the chemical industry is keen to see the commission apply measures to push up the price of carbon. Among them is David Cook, executive ambassador for Stockholm-based The Natural Step, a sustainable development organization that advises firms, including chemical companies, on how to be sustainable.

“A low carbon price is not a good thing,” Cook says. The chemical sector's backing of a low carbon price is shortsighted, he says, as the issue of climate change and sustainable manufacturing “is not going to go away.” With a low carbon price, the transition to clean energy “ultimately will still happen but will take longer than it should,” he says.

IN THE SHORT TERM, carbon trading in Europe is still generating cash to fund cleantech projects, albeit at a smaller scale than if the carbon price had been higher. In December 2012, the commission awarded more than \$1.6 billion to cofund 23 innovative renewable energy demonstration projects. The money was generated directly from the sale of 200 million emissions allowances under the commission's New Entrants Reserve 300 (NER300) funding program, which sets aside 300 million allowances for subsidizing installations of innovative renewable energy technology and carbon capture and storage (CCS). Private investors are set to contribute another \$2.7 billion to the projects.

It's “a ‘Robin Hood’ mechanism that makes polluters pay for large-scale demonstration of new low-carbon technologies,” says EU Commissioner for Climate Action Connie Hedegaard, referring to the legendary English outlaw who robbed the rich to feed the poor.

With the carbon price five times less than it was a few years ago, there is one-fifth of the money available for these projects, Ferdinand says. Projects funded by NER300 cover a wide range of renewable technologies, including advanced biofuels, concentrated solar power, geothermal power, and wind power.

CCS, a highly capital intensive but unproven approach to combating CO₂ emissions from sources such as power stations, missed out on funding from NER300 in December because projects were not advanced enough to meet commission criteria or because they lacked partner funding.



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The commission has a further 100 million carbon allowances that it plans to sell on the market in the next few years so that it can invest in a second wave of renewable technology projects. The commission will set aside almost \$400 million for CCS projects from this second auction round.

The development of low-carbon and even zero-carbon technologies will be

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slowed by the low carbon price, however, and that is a problem, says Michael Carus, managing director of Nova Institute, a privately owned firm in Hürth, Germany, providing expertise on low-carbon technologies. In particular, the move to develop

chemical processes based on the use of CO₂ as a feedstock will be adversely affected by the low carbon price just when it is starting to emerge as a viable commercial option, Carus says.

BUT ONE ANALYSIS indicates that the situation isn't so grim. A study by KPMG shows that investment in cleantech has not slowed despite the presence of a relatively low carbon price and economic downturn, says Barend van Bergen, head of KPMG's Global Center of Excellence for Climate Change & Sustainability. “The other good news is the spread of carbon regimes. It's not just the EU anymore. It's spreading into Canada, India, Brazil, China, New Zealand, and Australia,” van Bergen says. But, he points out, “we still need a significantly higher carbon price before there is a mainstream shift to renewables.”

If the EU carbon price continues to flounder, other EU member states, such as the Netherlands, could take action at the national level, van Bergen says. For example, countries might establish a carbon tax.

The U.K. already has taken such steps. It introduced a tax of \$7.90 for each metric ton of CO₂ generated in the production of electricity consumed by certain industries including chemicals. This price has been applied to top up the low price of the EU emissions trading scheme, says Nick Sturgeon, director for energy, trade, and competitiveness at the Chemical Industries Association, a U.K. industry group. The U.K. chemical industry is lobbying hard to attain exemptions from this carbon tax, Sturgeon says.

Although the U.K. has introduced a carbon tax, it is still an unusual approach. Many governments around the world that are seeking to reduce their greenhouse gas emissions in a meaningful way still consider carbon emissions trading as the only viable option.

Officials in countries including South Korea and Australia have been in detailed discussions with EU officials to determine the best options for setting up their national carbon emissions trading schemes. Although Europe's scheme is awash with oversupply of allowances, its problems have come at just the right time to ensure that developers of emerging schemes can learn from the EU's experience. ■

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