

Wind power in cold climate in the global energy landscape

Sten Lillienau

Or
Who's gonna take the bill?

Or
Who's gonna take the bill?



The bill?

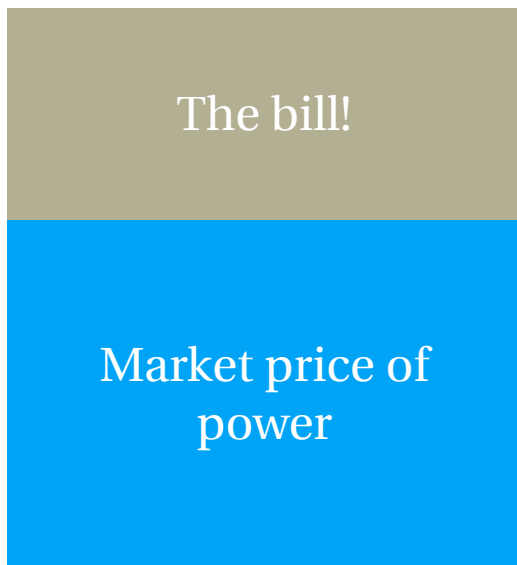
Market price of
power

The bill?



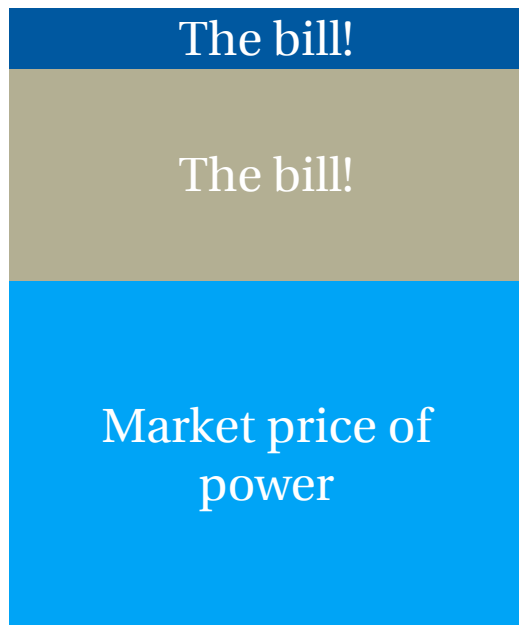
What the park owner needs
to make it a good investment

The bill?



What the park owner needs to make it a good investment

The bill?



What the park owner needs
to make it a good investment

Different systems

Feed in tariff

Limited feed in tariff

Marked based electricity certificate

Auction



Feed in tariff

Support

Market price of
power



Feed in tariff

Support

Market price of
power

Support

Market price of
power



Feed in tariff

No incentive to get more cost effective



Feed in tariff

The government offers a party of a certain standard, but don't know how big the bill can get

The consumers pay the bill!



Feed in tariff

The government offers a party of a certain standard, but don't know how big the bill can get

The consumers pay the bill!



Limited Feed in tariff

83,50 EUR

Support

Market price of
power



Limited Feed in tariff

83,50 EUR



Max 53,50 EUR



< 30 EUR



Limited Feed in tariff

Certain market risk stimulates cost effectiveness

83,50 EUR



Maximum 2 500 MW



Max 53,50 EUR

< 30 EUR



Limited Feed in tariff

The government invites to a party

And Limits how big the bill can get

The consumers pay the bill



Limited Feed in tariff

The government invites to a party

And Limits how big the bill can get

The consumers pay the bill



Marked based electricity certificate

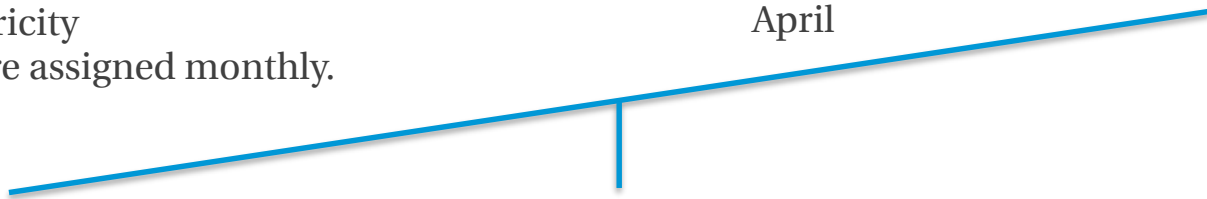


Supply:

1 elcertificate per produced MWh renewably
produced electricity
Elcertificates are assigned monthly.

Demand:

Quota based on electricity consumption.
Elcertificates are cancelled once a year – 1
April

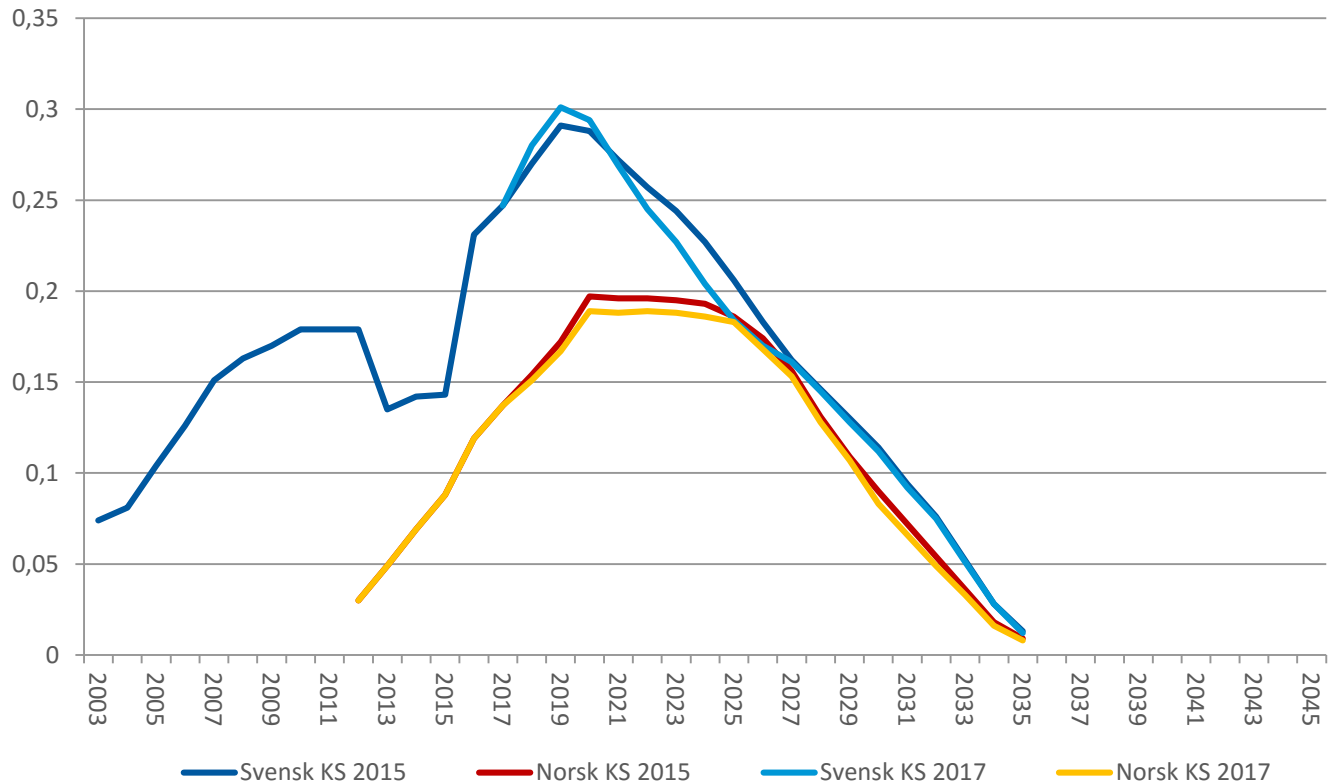


Shall stimulate build out of **28,4 TWh** new renewable production until 2020

Sweden will prolong the system – but Norway will not. Last date for approval is 31 dec 2021.

Swedish prolongation until 2030 – **additional 18 TWh**.

Current and revised quota



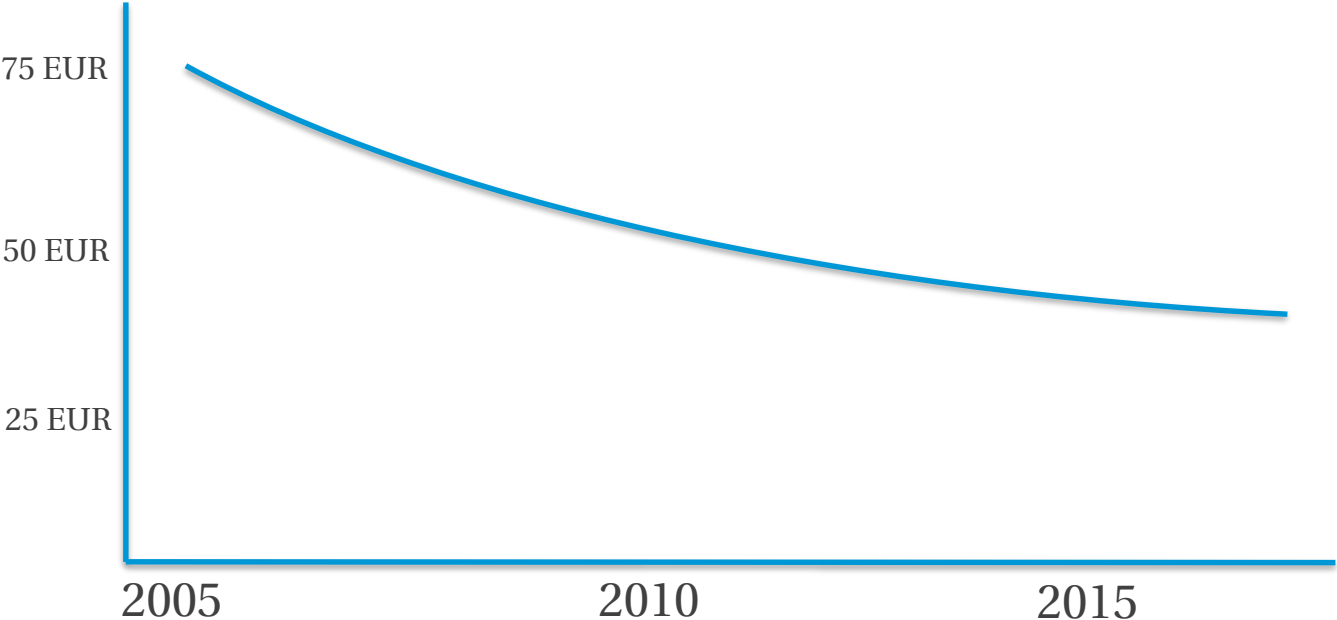
Marked based electricity certificate

Good: Promotes cost effectiveness

Marked based electricity certificate

Good: Promotes cost effectiveness

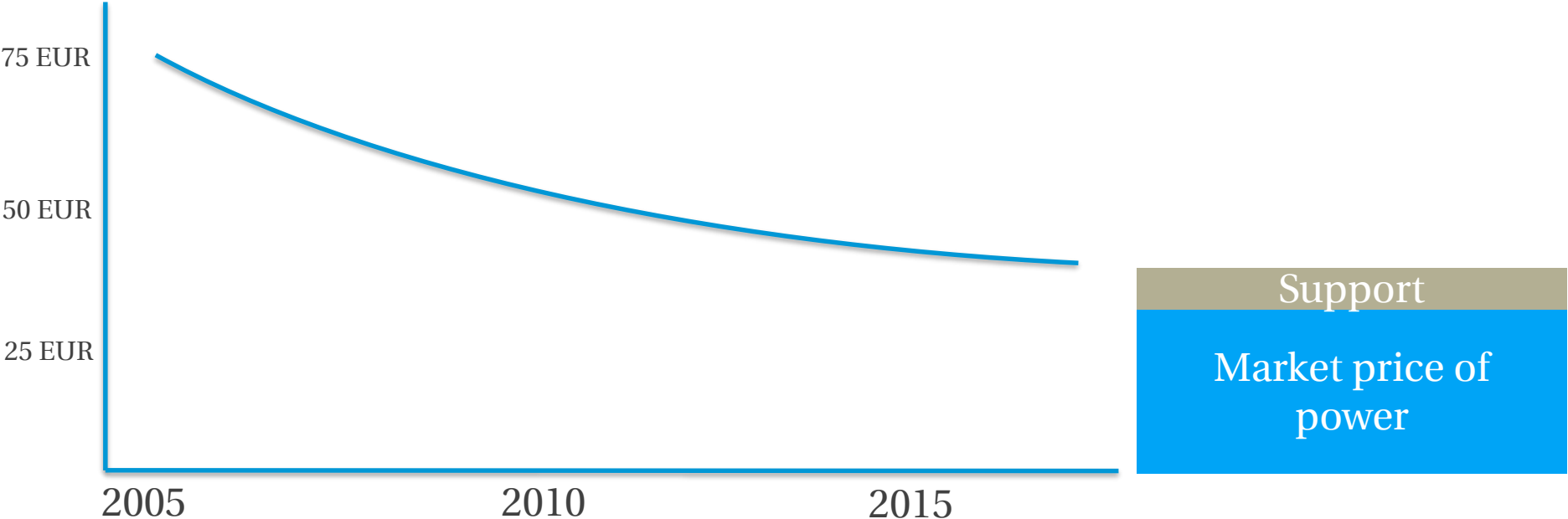
Bad: Promotes cost effectiveness



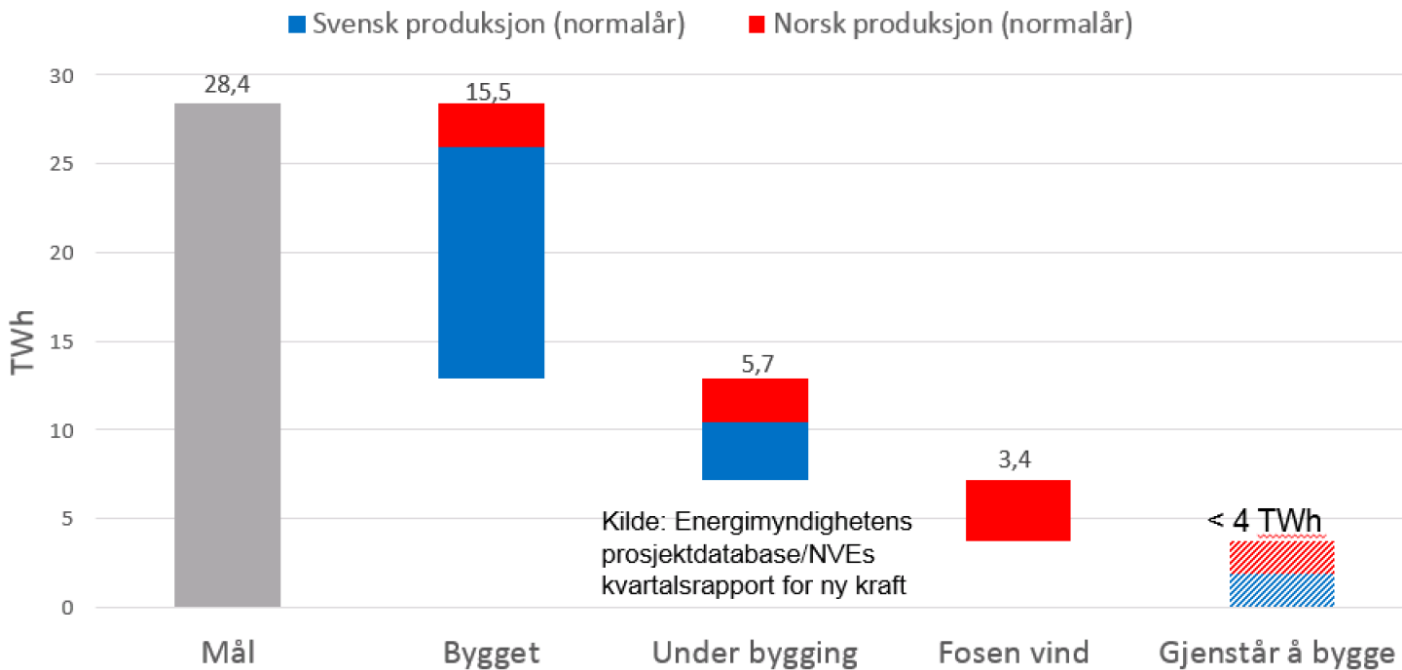
Marked based electricity certificate

Good: Promotes cost effectiveness

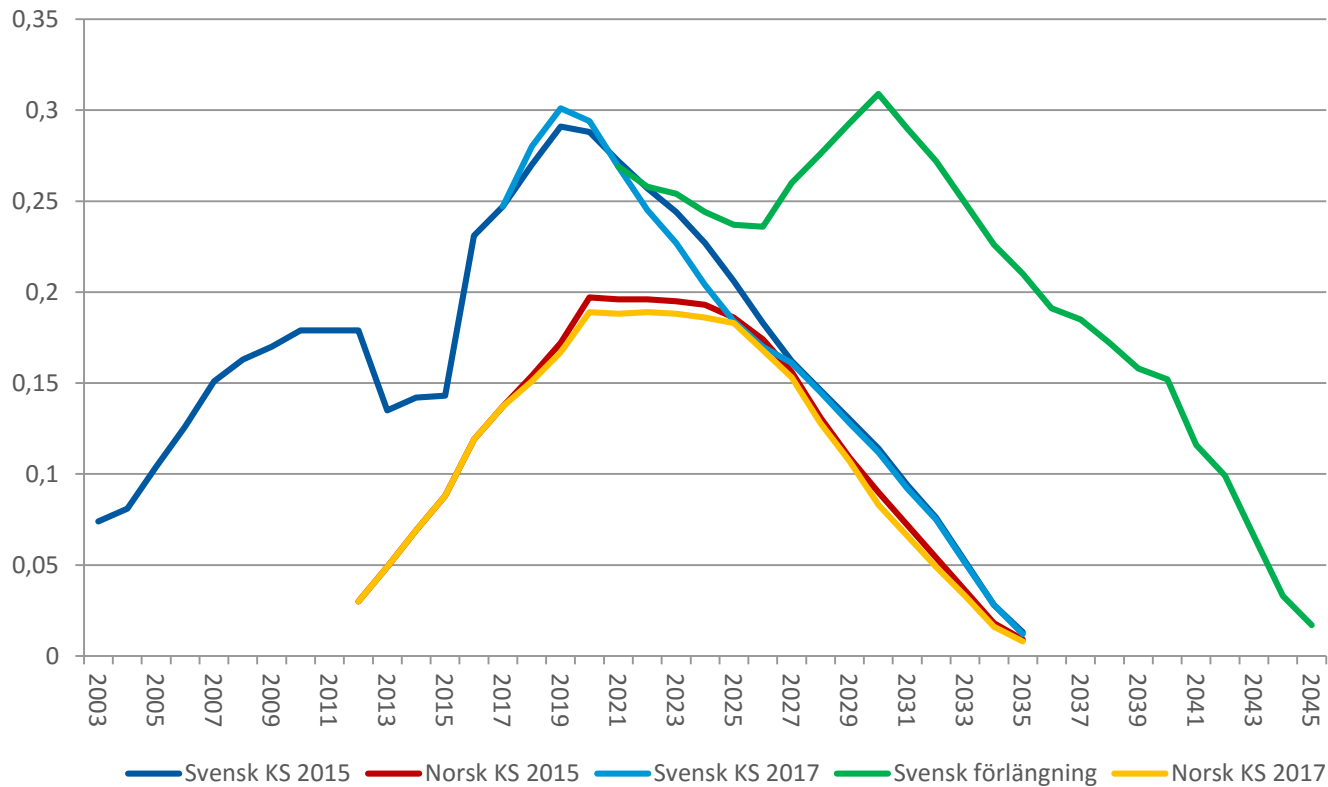
Bad: Promotes cost effectiveness



What's left



Current and revised quota



Marked based electricity certificate

What about the bill?



Marked based electricity certificate

What about the bill?



Government/
Authority



Marked based electricity certificate

What about the bill?



Government/
Authority



Consumers



Marked based electricity certificate

What about the bill?



Government/
Authority



Consumers



Owners of existing
older parks



Auction system

Make bids on much you need to make your project fly
You get the Support for a given period

Promotes cost effectiveness
Stable conditions for the owner



Auction system

Make bids on much you need to make your project fly
You get the Support for a given period

Promotes cost effectiveness
Stable conditions for the owner



But who pays the bill?

Support

Market price of
power



Will there be a bill?

Cost of establishing new renewable power is going down.

Ratification of Paris agreement. Cost of CO₂ will go up.
Market prices will go up.

Support

Market price of
power

Market price of
power



Will there be a bill?

Cost of establishing new renewable power is going down.

Ratification of Paris agreement. Cost of CO₂ will go up.
Market prices will go up.



There is nothing like a free lunch!



Thank you for your attention

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