

POWER MARKET AND STATE AID

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State aid and the power market

- ▶ Support to RES
 - Renewables increasingly competitive, especially in places with good resources.
Technology development and cost reduction
 - Efficient CO₂ price best support for RES
 - Support should be based on market mechanisms (auctions, certificates, etc)
 - Other support for non-mature technologies
- ▶ Compensation for indirect CO₂ costs
 - Competitiveness challenge for industry with high share of costs for electricity
 - Statkraft supports compensation, which needs to be independent from the power market

Compensation scheme in Norway

▶ Basis for compensation

- Calculation of compensation based ESA guidelines for state aid related to EU ETS after 2012
- Emission factor of 0,67 t CO₂/MWh applied
- CO₂ costs in 2018 are based on average EUA prices through 2017 with delivery in december 2018
- Payment in april of following year
- Long term contracts before 2005 and own production not eligible for compensation

▶ Competent authority

- Norwegian Environment Agency

Compensation payments

| Year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------|--------|
| CO2 price [NOK/t CO ₂] | 59,27 | 36,61 | 51,68 | 70,02 | 50,25 | 54,91 | 155,31 |
| Compensation [NOK] | 222 695 445 | 401 856 692 | 497 897 386 | 636 413 167 | 469 248 758 | | |

ETS

- ▶ Most efficient instrument for climate policy and reduction of emissions
- ▶ Market based change of relative prices
- ▶ CO₂ price is integrated part of the power price
- ▶ Separation of CO₂ price discriminates renewables and is against the principles of the ETS

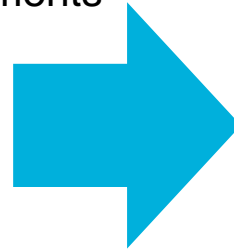
Power price formation

▶ Forward price

- Based on demand /supply
- Indicates level of market price, not obligatory to use
- Volatile

▶ PPAs

- Contracts on commercial basis
- One price negotiated, but many different elements
 - Expectet market prices
 - Delivery profile
 - Hedging
 - Risk allocation
 - CO₂
 - Possible taxes and charges

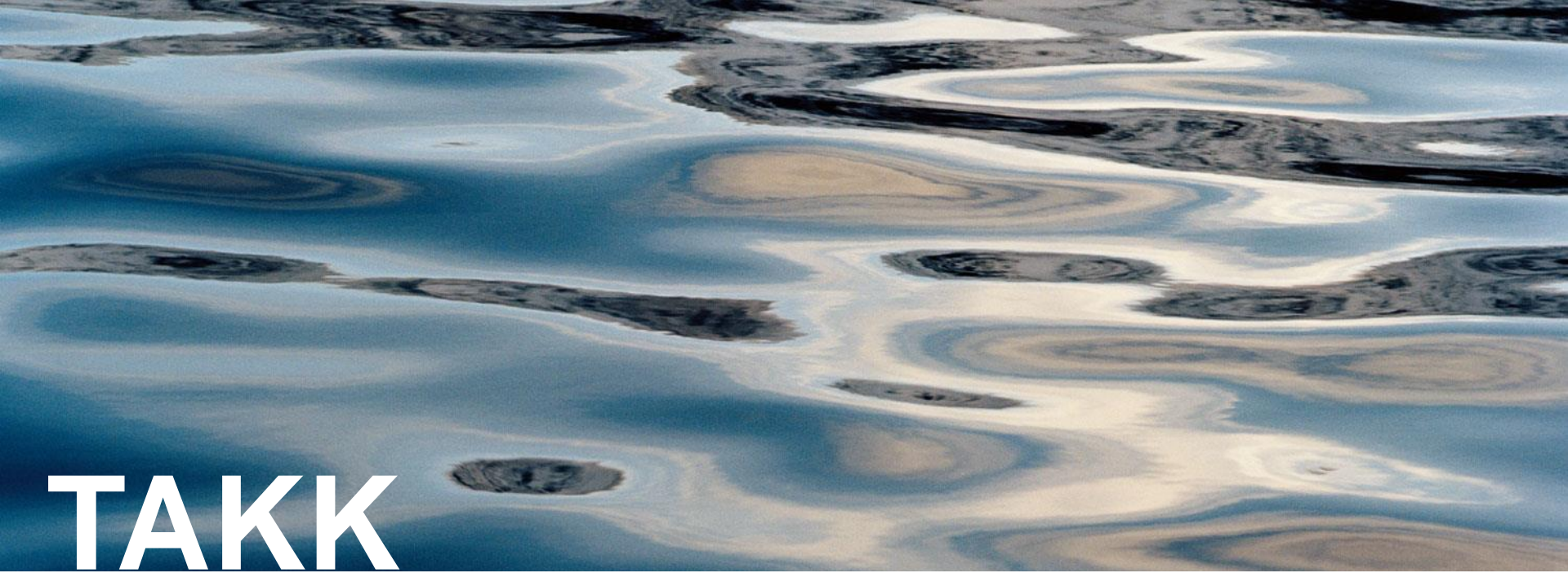


Itemising is impossible

- Impossible to define CO₂ share in price
- Different volatility for power and CO₂
- Different expectations

Possible impacts

- ▶ Specification of CO₂ component leads to different power prices and weakens efficiency of power market and equal level playing field
 - Contracts for RES not attractive – RES gets disadvantage
 - Incentivizes powerintensive industry to demand fossil fuels – against intention of ETS and climate policy
- ▶ Compensation needs to be paid independent from power price and through state budget



TAKK



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