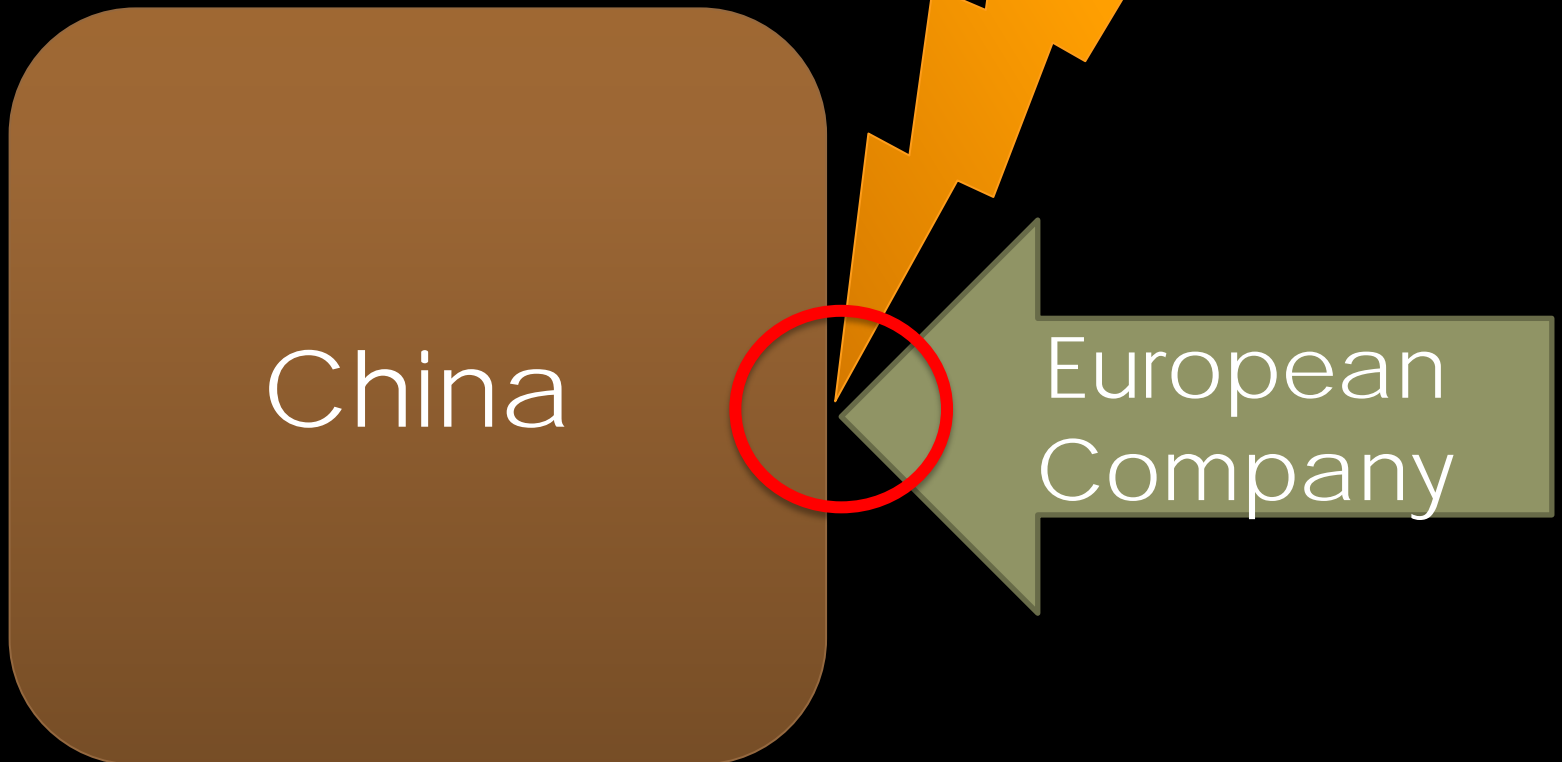


NTNU

# China's Offshore Wind Industry: Catch-Up and the role of certification

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# Research questions

- Technology transfer and the role of certification
  - How do European intermediaries convince the Chinese of the necessity of their service?
  - Do the Chinese actors view certificates and standards as advantageous?
  - If not, how do they deal with them?

# Thesis

- Certification and advisory agencies **actively spread** standards
- A standard comes with a methodology and accepting it goes against **developing your own know-how**
- Standards are **rejected** in China, because the Chinese want hands-on experience

## China

## Entering companies

### What?

Wants to build an offshore wind industry

Want to expand existing industry

### Why?

Needs the extra competencies

Have experience from Europe

### How?

Pay money for advice

Help a bit, but not give away too much knowledge

# Offshore Wind in Europe and China

- Europe: **7,343 megawatt** of installed offshore wind power in 73 wind farms
  - First wind turbine in 1991 in Denmark
- China: **400 megawatt** of installed offshore wind power in mainly two wind farms
  - First wind turbine in 2006 in Bohai Bay

# One year **fieldwork** in Shanghai

- 31 **interviews** in China
  - 12 interviews with six European certification and advisory agencies
  - 19 with Chinese industry and governmental actors
- 2-month **participant observation** at an European certification and advisory company in Shanghai
- Participated in several workshops, conferences and industry exhibitions in China

# Six certification and advisory agencies (CAA) in China

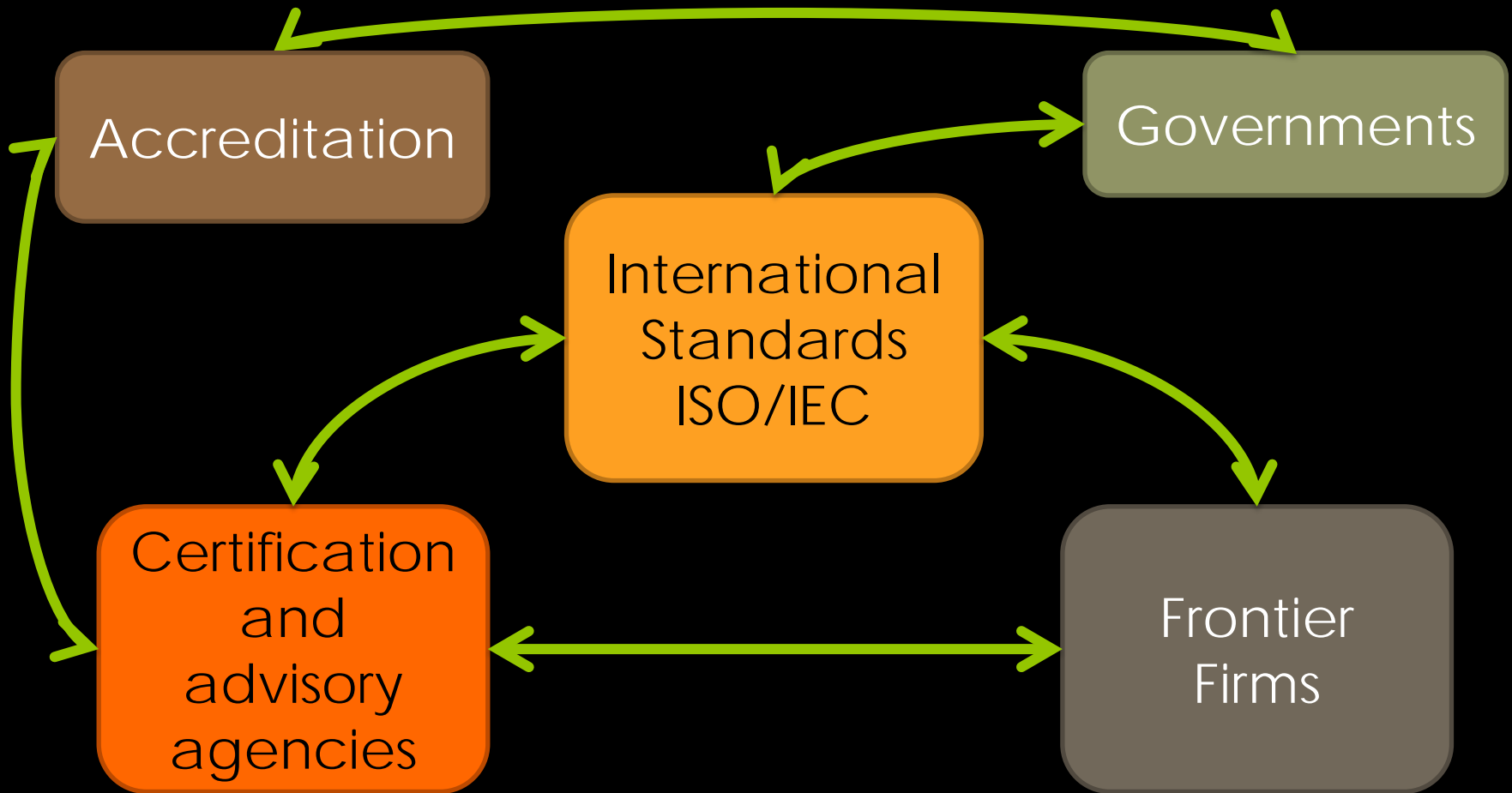
- CAA are service providers:
  - Large MNCs doing **classification / certification**, but also **engineering consulting**
  - Offer services in many industries: energy, maritime and O&G
  - for offshore wind in Europe they have provided:
    - Project certification
    - Type certification
    - Advisory and project management

# What is risk?

- Certification agencies want to manage risks
- Risks are managed based on uncertainty
- Power (2007): 'Organizations never encounter risk as a pure given; attention must be triggered, interpreted, and coordinated'
- Problem:
  - Are risks evaluated similarly in China?
  - Are certification and advisory agencies acknowledged as **legitimate** actors?



# International standards



# Certification and advisory agencies as **intermediaries**

- **intermediaries**: 'middlemen' between a technology and a potential market
- Certification and advisory companies:
  - maintain standards (Howells 2006)
  - transmit standards to users
  - assess whether or not something is according to a standard
  - contribute to developing international standards, ISO/IEC (Tamm Hallström 2000)

# The difference between Europe and China

China

Government approval

Design  
Institute

Developer

Construction

# The difference between Europe and China

## Europe

Finance

Regulations

Insurance

Certification and advisory

Design  
Institute

Developer

Construction

# Three competing narratives

- Domestic industry: "We don't need your help, we can do it ourselves"
- CAA: "They need our service, but don't know it yet"
- Chinese employee of CAA: "These services cannot be offered here, they must be reframed"

# Narratives of the local industry

- Active resistance to European certification practices:  
“We **don't need** them”
  - Certificates are not needed in the domestic market
  - “Only for some very important projects we will hire foreign consultant companies during the construction process”
  - a need to spend some time on their own to try and fail to develop offshore wind projects
  - “It is quite hard to sell services in China, because the Chinese prefer **physical things** that you can see, and not only what's in your brain”

# Narratives of the entering company

- “We have the experience, and **they need it**”
  - “The Chinese are arrogant in thinking they can do everything on their own. It would be good for us if they experience a first big fail, and they realise how important our experience and service is.”
  - Europe is risk averse, the Chinese are “just get on and do it”
- Thus far not very successful in enrolling the Chinese customers of their services. “Waiting” is their main strategy

# Narratives of the Chinese employees of entering companies

- Act as mediators between the narrative of entering company and local 'reality'
- "We need to **adapt** to a Chinese way"
- Example: Project certification
  - Disagreement with European employees as to what was the best strategy
  - "I tried several times to advertise the project certificate (to Chinese clients) and they were not really interested"
  - Similar service with a different name: "Risk management"
- Local employees were adapting the narrative, but this was not really acknowledged by the entering company



# Conclusions

- European certification companies are unsuccessful in selling their services
- This is largely due to differences in **risk** perception, views on the **service-**industry and a lack of attention to **local needs**
- Certification is unwanted in China because local companies stress learning and want to get first-hand experience

