

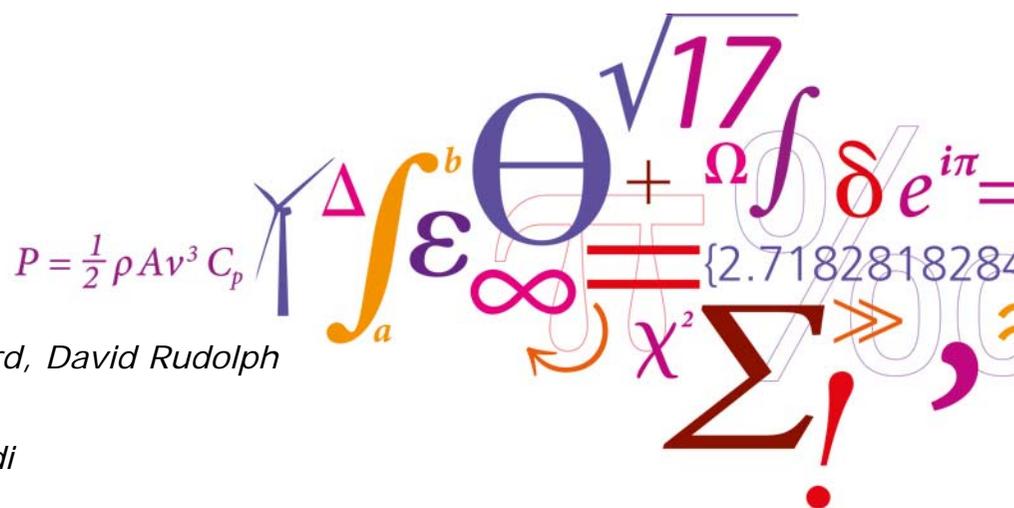
Wind 2050: Who is the developer?

Developer typologies and business models

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Wind 2050: Who is Tom Cronin?

- Mechanical engineer
 - MSc Renewable Energy
 - 10 years in engineering consultancies
 - Joined Risø in 2004
-
- Integration of wind energy into power systems
 - Wind farm development
 - Teaching
-
- Wind2050 project: Work Package 3



Who is the developer?

- Silly question! We all know
 - What a developer is
 - What a developer basically does
- But what does a developer have to do and why do they do it?
- Many different ways to approach a wind farm project
- This results in many types of developers
- Could one type of development be more 'acceptable'?

Sounds like it could be worth investigating....

Categories of developer – typology

Description	Employees	Typical portfolio	Example
Co-operative / vindmøllelaug	2	<10MW	Middelgrunden Vindmøllelaug
Enterprise groups: Landowner(s) / Manor owner(s) /Business owner(s)	0 - 2	<10 MW	Farmer(s)
Collective organisation / forening	1-10	10 - 100MW	Lemvigegnens Landboforening
Medium private company	10-100	50 - 500 MW	Eurowind
Medium utility	100-1000	0 - 100 MW	HOFOR
Large utility / corporation	200-10000	250 MW - X GW	Vattenfall

Business models

Aim: to try to identify the different business models being used

Result: there are at least seven models

- A: The company project model ('remote' corporate ownership)
- B: The enterprise model (local 'special' ownership)
- C: The true traditional Danish co-operative ('Vindmøllelaug')
- Hybrids:
 - A/C (company/co-operative)
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Model A

The company project model ('remote' corporate ownership)

- Company takes initiative
- Company is majority owner
- Track record very important
- Not local
- Portfolio of wind farms
- "Køberetsordning" offers 20% local share
- Use "selskab" form I/S, K/S, P/S for 20%
- Make contracts with landowners



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Model B

The enterprise model (local 'special' ownership)

- Local individual(s) takes initiative
- Farmer, landowner, manor owner, business owner
- No other wind experience
- Able to raise finance due to status
- “Køberetsordning” similar to Model A



VEDTÆGTER
for
Nørhede – Hjortmose Vindkraft I/S

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Model C

- The *true* traditional Danish co-operative ('Vindmøllerlaug')
- Local individual/body takes initiative
- Co-operative I/S set up *from the start*
- Manage project at high level using both consultants and local know-how
- Articles of I/S set out decision process
- Project capital from members
- I/S not allowed to hold debt
- "køberetsordning" requirement fulfilled by default
- Thousands of share holders
- Can only act slowly and access to financing restricted



Middelgrundens Vindmøllelaug

Offshore Wind Farm outside the Harbour of Copenhagen



e.g. Middelgrunden (2000) wind farm by Middelgrundens Vindmøllerlaug (>8000 shareholders) & (what was) Copenhagen Energy

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Model A/C hybrid

- The company / co-operative approach

- Initiated by an experienced developer
- Co-operative established early on
- Developer can cover upfront costs, relieving pressure on co-operative

e.g. Hvidovre (2007/2011) by Hvidovre Vindmøllelaug (>2000 shareholders) and Dong Energy

e.g. Prøvestenen (2013) by Prøvestenen Vindmøllelaug (>1,500 shareholders) and HOFOR



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Model B/C

The enterprise/co-operative approach

- Initiative taken by a local individual
- Extend local benefits beyond minimum
- Use 'not-for-profit' foundation
- Yield from foundation => good causes
- Use proportion of revenue stream => good causes
- "Køberetsordning" still applies



Landmænd investerer 240 millioner i vindmøller

To vestjyske landmænd har kastet sig ud i et gigantisk vindmølleeventyr

From maskinbladet 21.10.11 about Troldhede wind farm

Koster vind
VINDMØLLER VED KOSTERVIG

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Model A/B/C

- The enterprise/business/co-operative approach
 - Initiative taken by a local body
 - Project set up as an I/S from start
 - Local businesses involved => gives access to financing
 - Extend local benefits beyond minimum
 - Use 'business' foundation
(erhvervsdrivende fond)

Special case of Hvide Sande

- Project pays high land rent to harbour
- Enables harbour to take out loan
- 80% owned by fund
- 20% owned by 400 locals
- Foundation's aim to improve business & tourism in Hvide Sande area



Fonden Hvide Sande Erhvervsudvikling!

FONDENS FORMÅL

4. Fonden har til formål at drive 3 vindmøller på Hvide Sande Nordhavn på et område tilhørende Hvide Sande Havn og derigennem understøtte udviklingen af Hvide Sande havn og turismen i Ringkøbing-Skjern Kommune gennem produktion af vedvarende energi.

ANVENDELSE AF FONDENS OVERSKUD M.V.

26. Fondens eventuelle årlige overskud opgjort i henhold til årsregnskabsloven med tillæg af frie reserver og efter fradrag af henlæggelser i henhold til årsregnskabsloven og efter rimelig konsolidering af fonden skal anvendes til at yde støtte til udvikling på Hvide Sande havn som bæredygtig havn med autentiske erhverv og derigennem til fremme for erhvervslivet i Ringkøbing-Skjern Kommune - herunder fortsat udvikling af den bæredygtige turisme.

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Finally: Model D

- The municipality approach
 - Municipalities can own/invest in turbines
 - “køberetsordning” still applies
 - Use of revenue is relatively restricted

Special case of Samsø

- 5 offshore turbines owned by Samsø kommune
- 3 by private investors e.g. farmers
- 1 by Paludans Flak Hav Vins I/S
- 1 by I/S Difko Samsø



Samsø
Kommune



Developers and business models

Still some work left to do:

- What capacity has been installed using with type/model?
- Is one type more conducive to acceptance than another?
- What are the motives behind the various types and models?
- Are there trends?
- Do ownership/legal structures affect acceptance?

Final thoughts

- Will we reach the goals with the models we have?
- If the køberetsordning successfully engages local people...
...will offering more help?
- How much transfer of control/ownership/rewards can a project sustain?
- Transferring much of the ownership (full co-operatives) appears to help acceptance
- But co-operatives are slow and can they raise the capital required?

What's your preferred business model and why?