



**VedvarendeEnergi**

- Dansk miljøorganisation, der arbejder med den grønne omstillingen
- DK og Afrika
- Fokus: globalt ansvar og alle med i omstillingen

The slide features two circular logos. The left logo is yellow and features a smiling sun with the text 'ATOMKRAFT?' at the top and 'NEJ TAK' at the bottom. The right logo is green and features a central circle with the text 'Grøn omstilling i en bæredygtig verden' and 'Globalt ansvar' around it, surrounded by four segments representing different aspects of sustainability.

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## DMDP Modalitet

*Danida Market Development Partnerships  
promoverer kommercielt orienterede partnerskaber,  
der bidrager til at udvikle markeder og fremmer lokal  
økonomisk vækst og beskæftigelse i udviklingslande.*

Ligger under Udenrigsministeriets kontor for Vækst,  
Beskæftigelse og Erhvervsudvikling.

Koble viden fra kommercielle og ikke-kommercielle  
partnere. Minimum en lokal partner

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## Rationalet - behov og efterspørgsel

- Over 1 mia. uden strøm
- Politisk vilje og forpligtigelse til at levere
- Private sektor kan se en forretning
- Investorer har penge til at investere
- Potentiale på 50.000 mini-grid- inkl vind i 2030 i SSA

Så hvad venter vi på?

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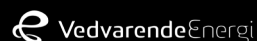
## Kenya MiniWind

Innovation – IKKE rural electrification!

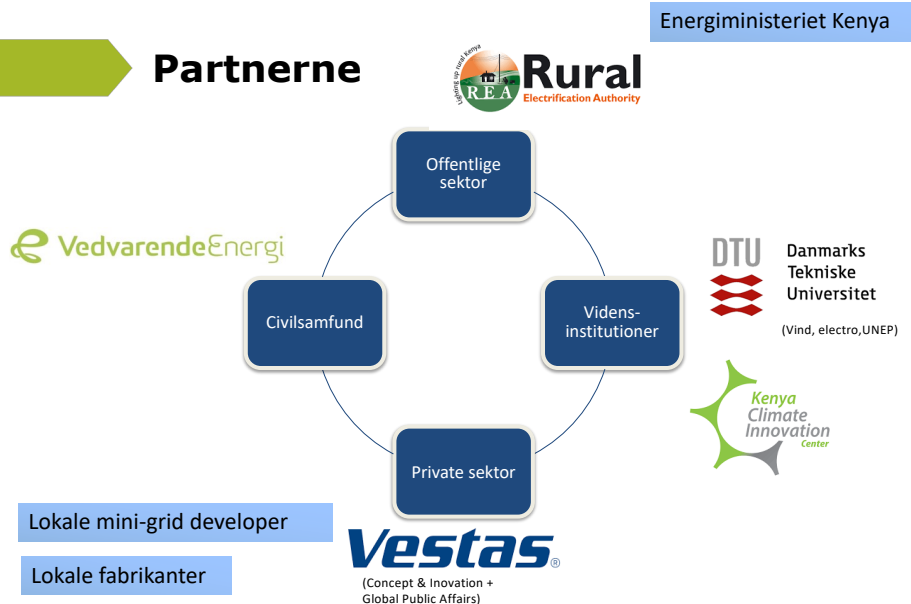
The objective of the project is to demonstrate how a partially locally produced and operated wind turbine in mini grid systems can provide access to affordable and reliable electricity in Kenya and contribute to stimulating employment and growth and to creating a market for smart mini-grids in Kenya and the region.

Budget: 8 mio. kr + Vestas, 4 år (2017-2021)


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## Partnerne



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## Kenya Miniwind


Antagelse:

- Vindkraft sammen med solceller og batteri kan reducere energiomkostningerne ift. et rent solcelle og batteri system.

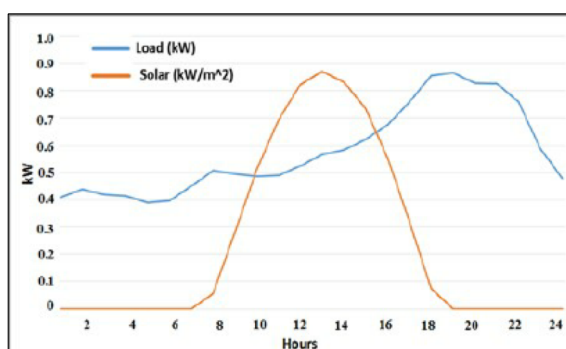
Kræver:

- Markedsmodning
- Rette rammevilkår
- høj grad af lokal inddragelse & ejerskab (O&M, local content)
- multi-stakeholder tilgang


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## Hvorfor passer sol og vind godt?



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## Udfordringer

- Er turbinen konkurrencedygtig? (er der en forretning for Vestas)
- Initialomkostninger er høje (O&M er lav)
- Manglende viden om værdien af at vindenergi reducerer behovet for batterilagring
- At finde det mest hensigtsmæssige sted til at integrere vindkraft er tidskrævende.
- Rammevilkårene skal styrkes
- Hvordan laver man en turbine, der er pålidelig, effektiv og billig

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## Mål og aktiviteter


*Enabling framework and market creation for mini grids with wind power supported by relevant Kenyan authorities (Marked studies, enabling frameworks, standards)*

*Local community requirements reflected in mini-grids with wind power (Feasibility studies, community dialogue, model for expansion)*

*Capacity of mini-grid developers and local companies involved in production of wind turbines enhanced (Partly local production, suppliers, decision making tool, training of stakeholders)*

*Wind turbine designed, demonstrated and tested (Design, demonstration, business model, contracting, monitoring, M&O)*

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## Tidsplan

Activities	2017		2018				2019				2020				2021	
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
<b>Output 1: Enabling framework and market creation for mini-grids with wind power supported by relevant Kenyan authorities</b>																
1.1 Study of market creating challenges for kW wind turbines in mini-grids in Kenya, Tanzania and Uganda																
1.2 Development of proposal for strengthening the enabling framework for mini-grid systems with wind power																
1.3 Development of proposal for strengthening the enabling framework for local industrial development																
1.4 Analysis of needs for standards and testing of wind turbines																
<b>Output 2: Local community requirements reflected in mini-grids with wind power</b>																
2.1 Five feasibility studies for selecting sites for demonstration of wind turbines in mini-grids																
2.2 Dialogue with the selected communities and other civil society entities in supporting equality and transparency in rural electrification projects																
2.3 Develop models for expanding the Kenyan grid developer & operator sector and market through community involvement																
<b>Output 3: Capacity of mini-grid developers and local companies involved in production of wind turbine enhanced</b>																
3.1 Analysing challenges, risks and opportunities for local production in SSA																
3.2 Screening of potential local suppliers in Kenya for production																
3.3 Training of suppliers in production																
3.4 Development of simple decision-making tool for integration of wind in mini-grids																
3.5 Training of mini-grid developers, REA and Kenyan Power and other relevant stakeholders in integration of wind in mini-grids																
<b>Output 4: Wind turbine designed, demonstrated and tested</b>																
4.1 Vestas in-house design of small scale kW wind turbine using innovative solutions																
4.2 Demonstration of integration of wind turbine into Kenyan mini-grid system																
4.3 Business model for new wind turbine based on local job creation																
4.4 Contracting local suppliers for supply related to demonstration turbines																
4.5 Process description for installation and maintenance of the wind turbine																
4.6 Monitoring (performance) of hybrid mini-grid operation																
<b>Output 5: Communication</b>																
5.1 Meetings with donors and international investment banks																
5.2 Communication to the Danish population and Kenyan stakeholders																

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## Markedsstudier

Land	Sites i alt (<150kW)	Velegnet til vind (min 4 m/s)
Kenya	155	53
Uganda	6	0
Tanzania	60 (+150 udviklingscentre)	23

Market for the integration of smaller wind turbines in mini-grids in Kenya

October 2018  
Kenya Ministry of Energy

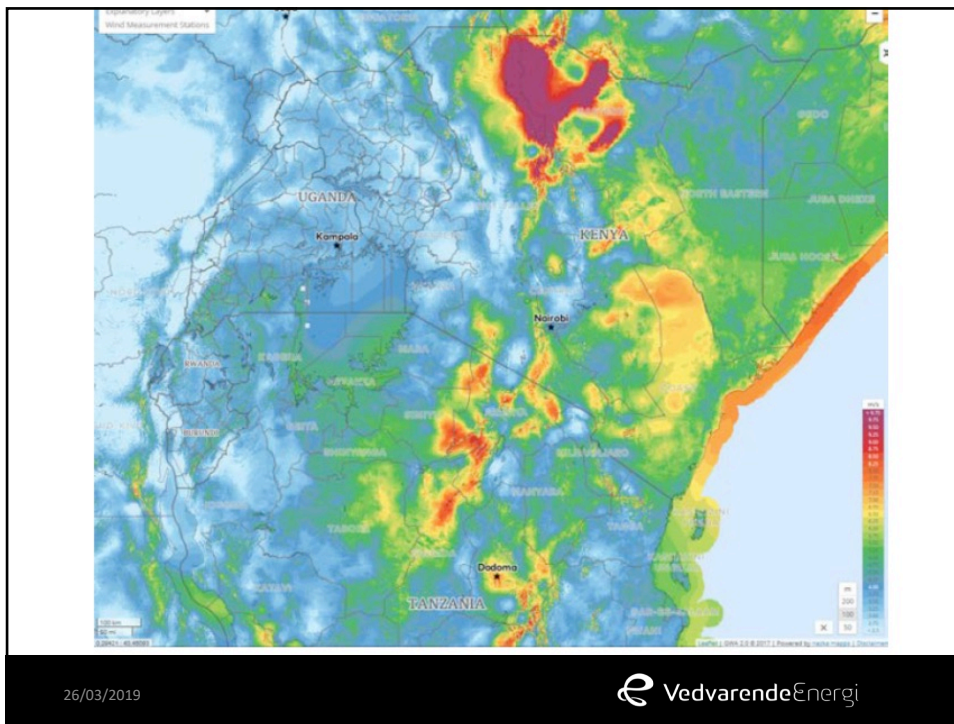
Market for the integration of smaller wind turbines in mini-grids in Uganda

October 2018  
Kenya Ministry of Energy

Market for the integration of smaller wind turbines in mini-grids in Tanzania

October 2018  
Kenya Ministry of Energy

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## Privatforbrug



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## Kommerciel



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 **Potentiale**



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**Tak for ordet**

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