

# Emergent dynamics of community-owned renewable energy in regional communities

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# Overview

1. Introduction to community-owned renewable energy
  - Status in Australia
  - Two cases: Hepburn Wind & Denmark Community Wind
2. My research
  - questions, methodology, theoretical context & status
3. Emerging dynamics:
  - Social, Technical, Economic, Environmental, Political
  - Challenges
4. Concluding thoughts



# Grassroots participation in renewable energy

## Every project is different:

- **Technology** – wind, solar pv, biomass digesters, small hydro
- **Scale** – Asset scale 10kW → Very large 10MW
- **Legal structure**– cooperative, company, trust, association.
- **Motivations, values & benefits** – climate change, self-sufficiency, local empowerment, regional development, etc.











# Community owned renewable energy

*“... projects where communities (of place or interest) exhibit a high degree of ownership and control of the energy project, as well as benefiting collectively from the outcomes (either energy-saving or revenue-generation)”.*

Seyfang et al (2013: 978)







*A community renewable energy project is as much about our approach as it about our physical structures and technologies.*

(Walker & Devine-Wright 2007)

# Processes & Outcomes

## ***Process:***

- Who the project is developed and run *by*
- Who is involved and included in planning and decision-making?
- Who has power and influence?
- How open, inclusive and extensive is the consultation process?

## ***Outcomes:***

- What technology & scale?
- Who is the project *for*?
- Who benefits from the project?

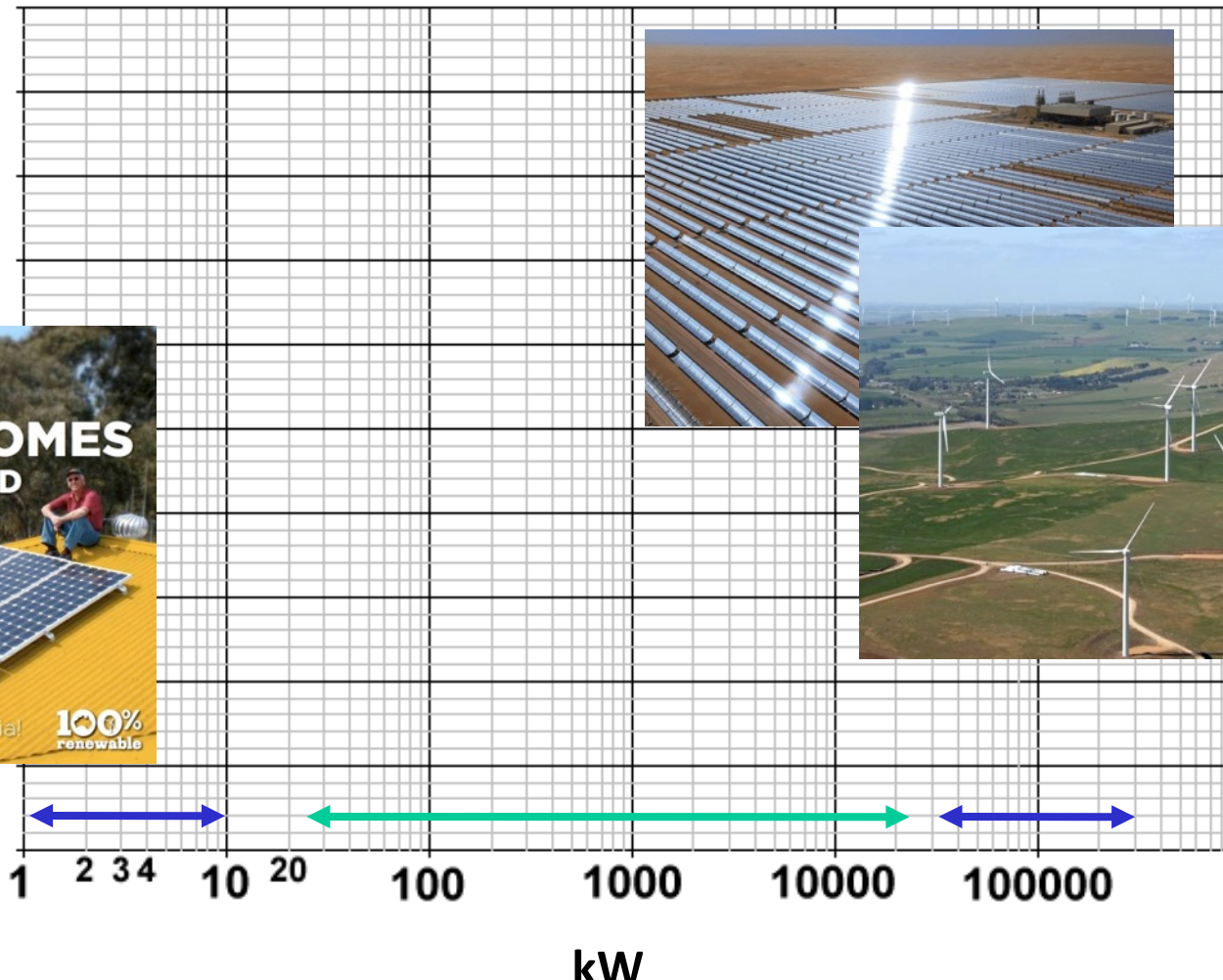
(Hicks & Ison 2014)





# Australian Renewable Energy

Utility Scale



Household Scale



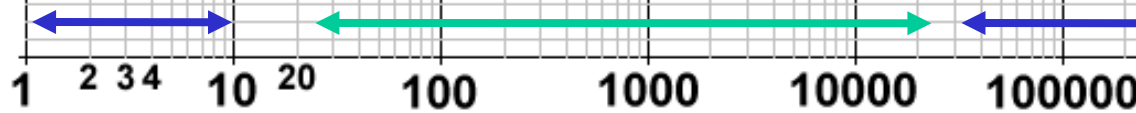


# Australian Renewable Energy

Utility Scale



Community Owned Renewable Energy



kW

Household Scale





# Map of Australian CRE Projects – 2009





# Map of Australian Projects – February 2014



# Operating CORE projects in Australia

Project Name	Technology & size	Type
Hepburn Wind (VIC)	4.2MW wind	Investor cooperative
Denmark Community Windfarm	1.6MW wind	Investor company
CORENA	7-10kw solar PVx 2	Donation based not-for-profit association
Repower Shoalhaven	99kW solar PV	Investor company in partnership with Bowling Club
Clear Sky Solar Investment	10-60kW solar PV x 6	Investor trust
Mooreland Energy Foundation	2-3kW solar PV x 300	Not-for-profit association in partnership with local council & pensioners

## Hepburn Wind

2x2.1MW Repower wind turbines

Began operating June 2011

Cost \$12.9 million

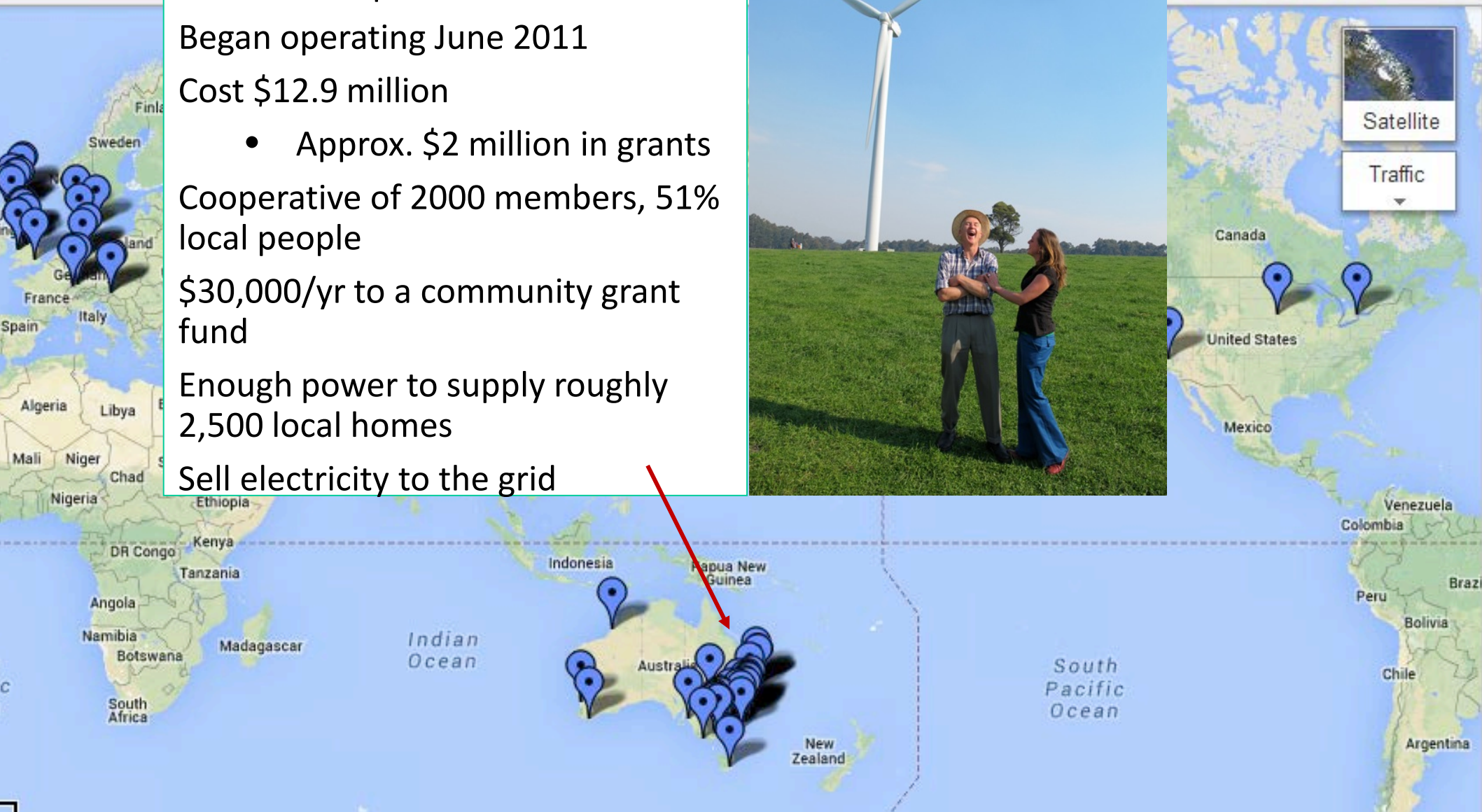
- Approx. \$2 million in grants

Cooperative of 2000 members, 51% local people

\$30,000/yr to a community grant fund

Enough power to supply roughly 2,500 local homes

Sell electricity to the grid





## Denmark Community Wind Farm

2x 800kW Enercon turbines

Began generating Feb 2013

Cost \$6 million

- approx. \$2 million in grants

Public Company with 116 shareholders,  
86% are locals

200,000 shares owned by DCW Inc, not-  
for-profit association

- dividends on these distributed via  
grant fund; approx \$10,000/yr

Sell electricity to the grid



## Research aims

- to understand what community-owned approaches to renewable energy development offers to regional communities, especially where regional development is conceived beyond a narrow economic focus.
- how elements of legal structure, community engagement practices and economic arrangements influence project outcomes and dynamics in communities .

## Methodology

- Action research: building on existing experience & contact
- Focus on mutually beneficial & mutually useful research outcomes
- Qualitative (mostly): interviews, focus groups, participant observation, social network & transaction mapping & photo-voice.

# Research status

- Field work and participant observation with Australian case studies  
2/3 complete
- Interviews with regional development proponents began
- 2015: 2x Scottish case studies
- 2016: due to complete

# Redistributive potential

.... the ways in which community-owned renewable energy projects shift established patterns and outcomes.

➔ Across social, technological, economic, environmental and political factors

## Theoretical context

- Community development critiques of regional development  
(Cahill 2010; MacCallum et al., 2009; Cameron & Gibson 2005)
- Diverse / community economies, reading for difference and the performativity of knowledge (JK Gibson-Graham)



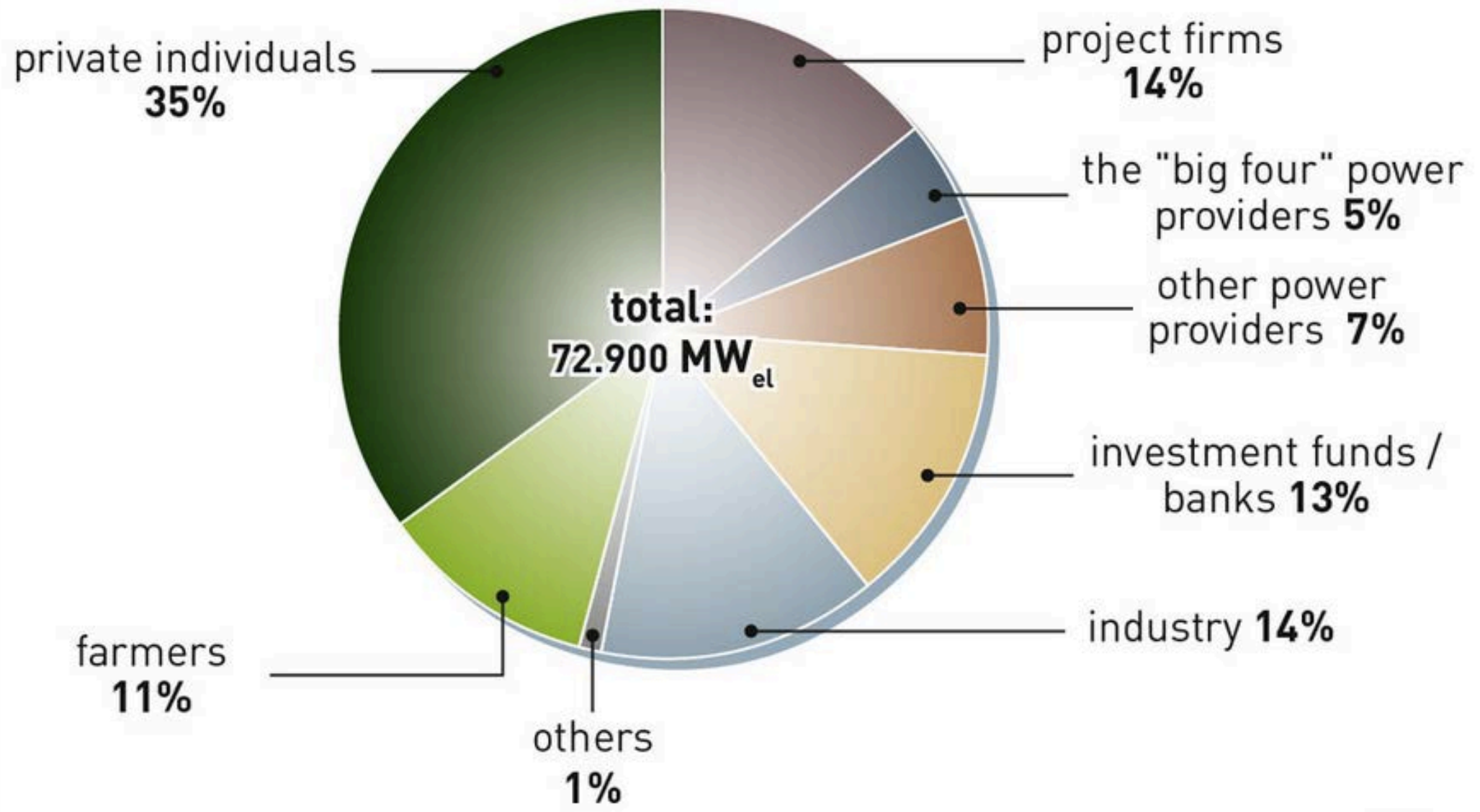
# Social

- Democratised energy decision-making & development
  - Majority local shareholders; one-member one-vote
  - Opposition still present (but to less extent); more capacity & commitment to engage productively with opposition
  
- Redistributes power & agency
  - Builds local capacity that is transferred to other, non-energy related efforts in local community
  - Demonstrates ability of community to deliver significant projects & acts as a catalyst for others in local community & beyond



# Renewable energy in the hands of the people

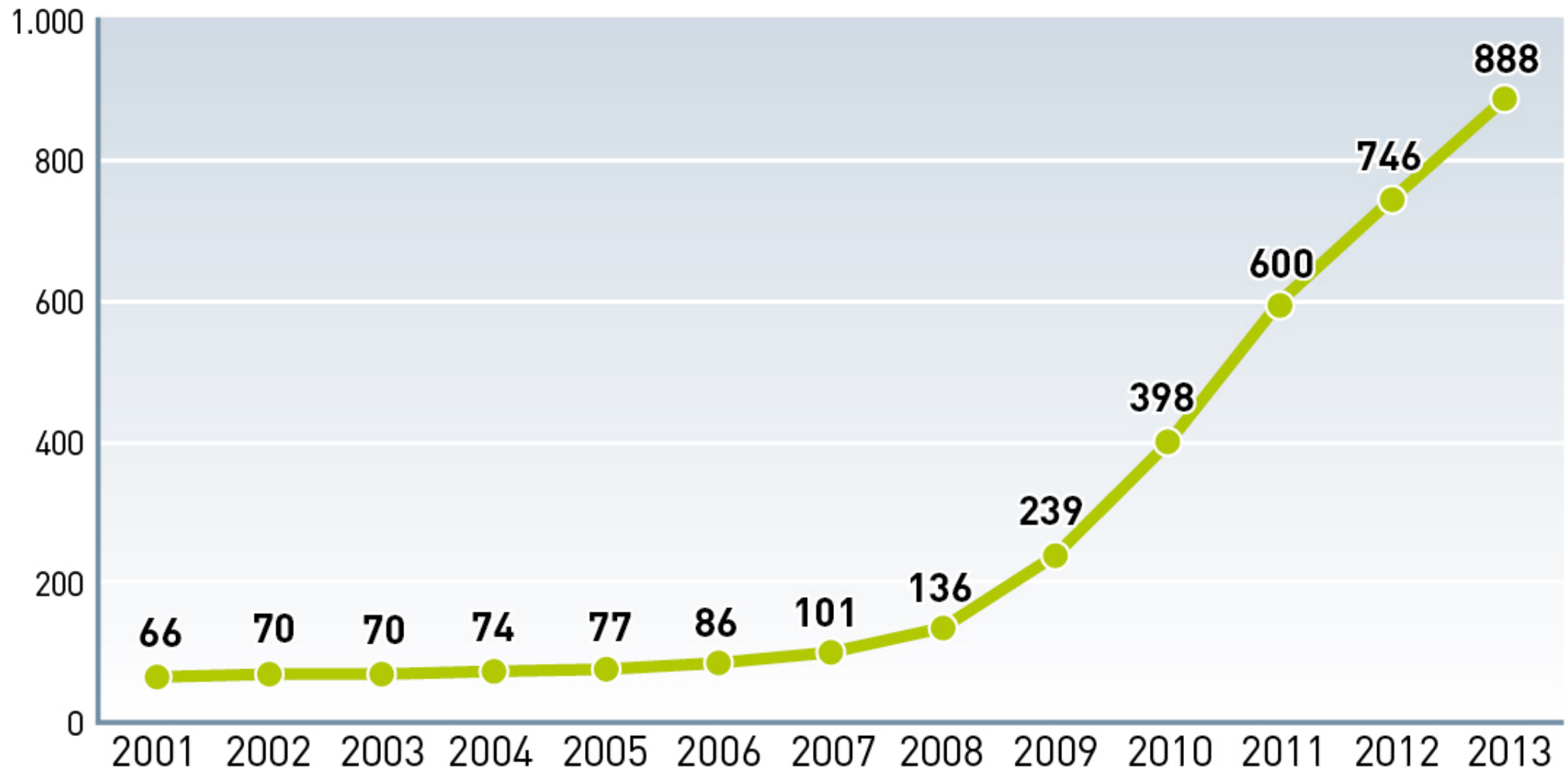
Ownership distribution of installed RE capacity for power production  
2012 throughout Germany.



Source: trend research; as of: 04/2013

# Energy Co-operatives in Germany: A Success Story

Over the last few years the number of energy co-operatives has increased sharply.



Source: Klaus Novy Institut; as of 01/2014

[www.renewables-in-germany.com](http://www.renewables-in-germany.com)



# Technological

- Increased uptake of renewable energy technology
  - Act to support and develop renewable energy, even when there is lack of government action or support
  - Increased levels of understanding and support for renewable energy technology through community education & exposure
- Shifts energy from being centralised, non-renewable and controlled to being distributed, locally available, renewable and (hypothetically) accessible to all
  - Changing relationships to energy & place: identity, culture & awareness of energy.
  - Changing physical landscapes: can be contentious





# Economic

- Redistributes economic benefit by localising money flows
  - Local share offering, local purchasing policy and grant funds
  - BUT cannot always pay a return; often lower returns than other forms of investment; often small in terms of regional economy
- redistributes economic decision making: the economy becomes a site of ethical decision-making
  - Prioritising grant giving to local environmental & social initiatives over shareholder returns.
  - Calculating 'sweat equity' & gifting equivalent value in shares to not-for-profit association to distribute dividends earned as grants



# Political / Policy

- Redistributes emphasis on the roles of different scales in energy decision making and climate action (Cameron & Hicks 2014)

→ From power concentration at the international scale, to the awareness of a 'flat ontology' in which multiple networked actors interact and exert influence in non-linear ways.

→ Brings attention to small & localised responses as important sites of action and innovation

- Mobilises people on energy issues

→ Increasing participation & power in policy processes

- Changing understanding of legal structures

→ New ways of being used; identifying inadequacies



# Challenges of the community-owned approach

- limited direct economic impact in regional economies
- continually changing & contested policy environment (renewable energy, carbon price, climate change)
- complexity of operating environment (legal structures, energy market, grid network) & inexperience of community actors
- conflict & opposition within the community



## Concluding thoughts

*“the low-carbon energy transition is fundamentally a geographical process that involves reconfiguring current spatial patterns of economic and social activity” (Bridge et al 2013: 331).*

- Changes in energy market & climate policies as opportunities, not threats, to regional economic vitality
- Renewable energy transition will have repercussions on regional development and social fabric
- Community-owned renewable energy approaches are an important part of the mix, offering unique benefits – while also coming along with their own suite of challenges!



# More Info...

**Jarra**

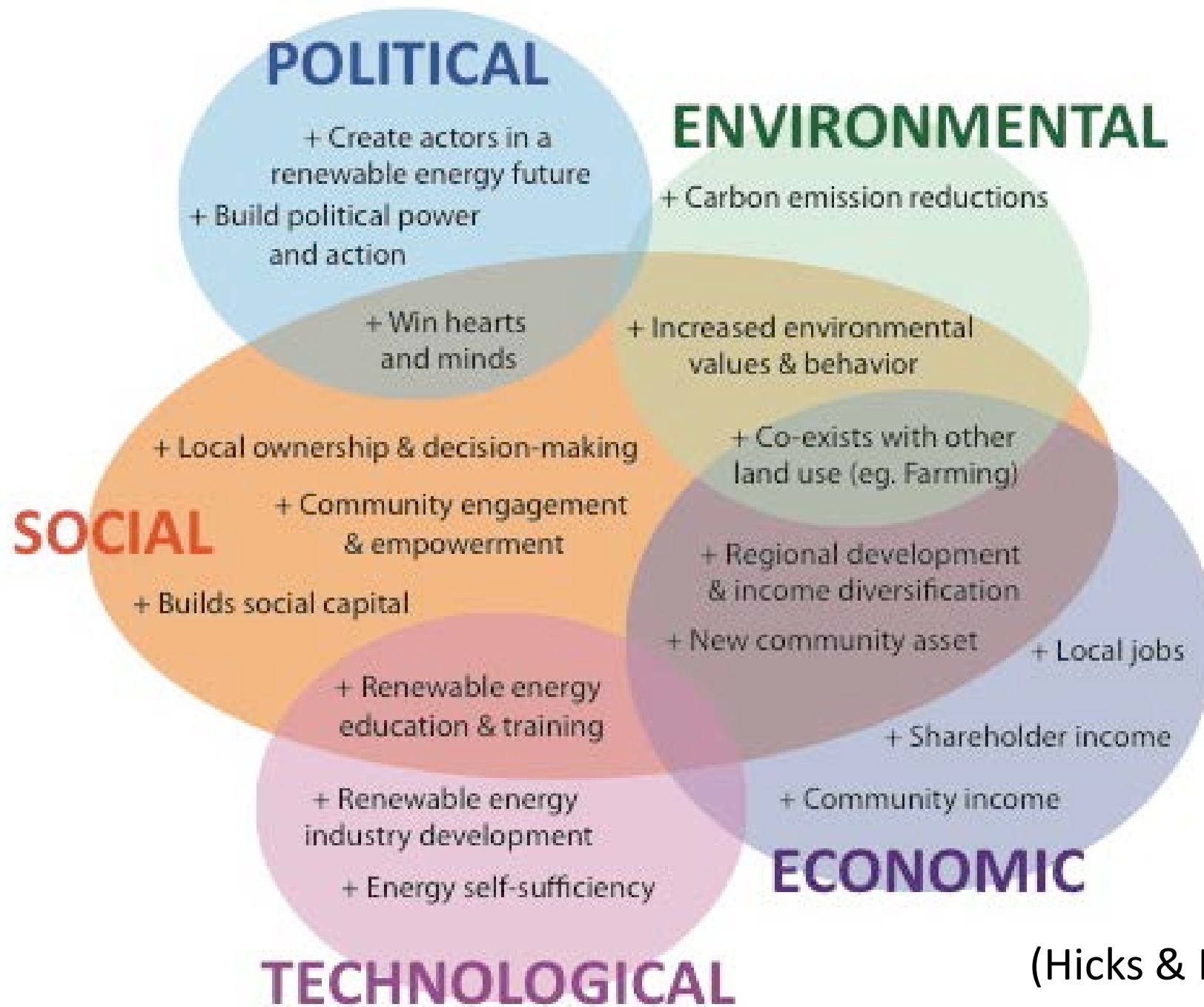
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Twitter: [CommunityPowerA](https://twitter.com/CommunityPowerA)



# Reported benefits & motivations



(Hicks & Ison 2014)