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# Introduction to Community Energy

September 2020

**Franziska Mey**

Community Power Agency

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# Agenda

- What is community energy?
- What are the benefits?
- Types of projects/models
- Aspects of a project (includes technical, legal, social, financial)
- Networks and links

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# What is Community Owned Renewable Energy?


Sprite

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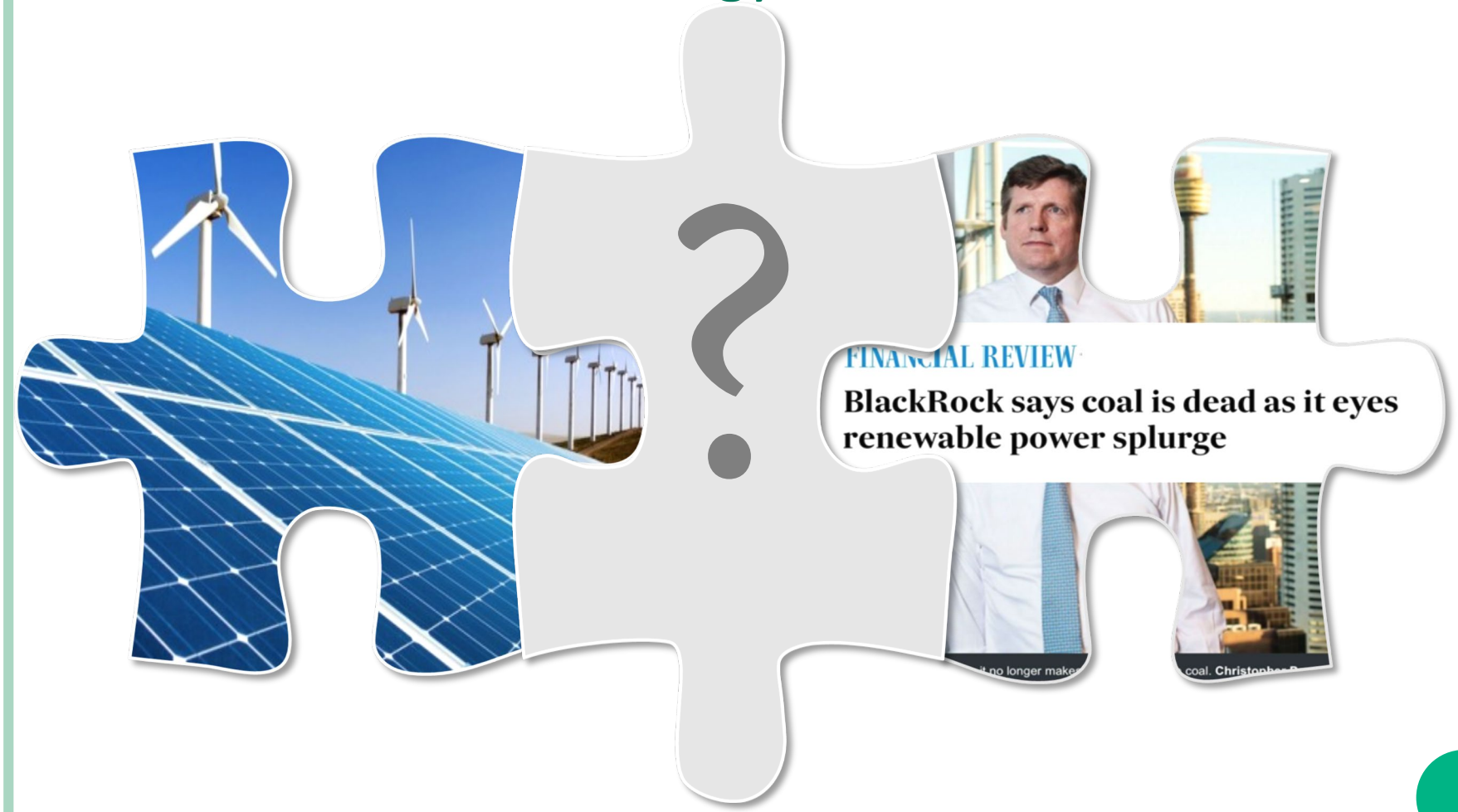
# More than a technology



# Community energy is about people

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***"the most important question is not whether this transition is happening, but how we manage it to maximise the benefit to all Australians"***

*Ison & Langham, The Conversation, 17 June 2015*

**- and will it be fast enough to meet the demands on climate change?**

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# CORE:
# An important part of the energy mix

## Germany

- 2013: over 200,000 people own shares in wind farms
- 888 energy cooperatives
- 46% of RE capacity is owned by individuals & communities

## Denmark

- 1980-90's: CORE was the dominant form of renewable energy ownership
  - CORE provided support to the fledgling wind industry
  - Vestas & Bonus are now world leaders in wind technology
- 2011: over 20% of Denmark's electricity is from wind power
  - 25% of this is community-owned
  - Community-owned wind supplies 3.5% of national electricity

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# Scotland


- Over 500 community energy projects
- Over 600 MW of community energy

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# Definition

*Community energy is where a community develops, delivers and benefits from sustainable energy projects*.

- supply-side projects such as renewable energy installations and storage
- demand-side projects such as energy efficiency and demand management.
- community-based approaches to selling or distributing energy

# Diversity of CORE

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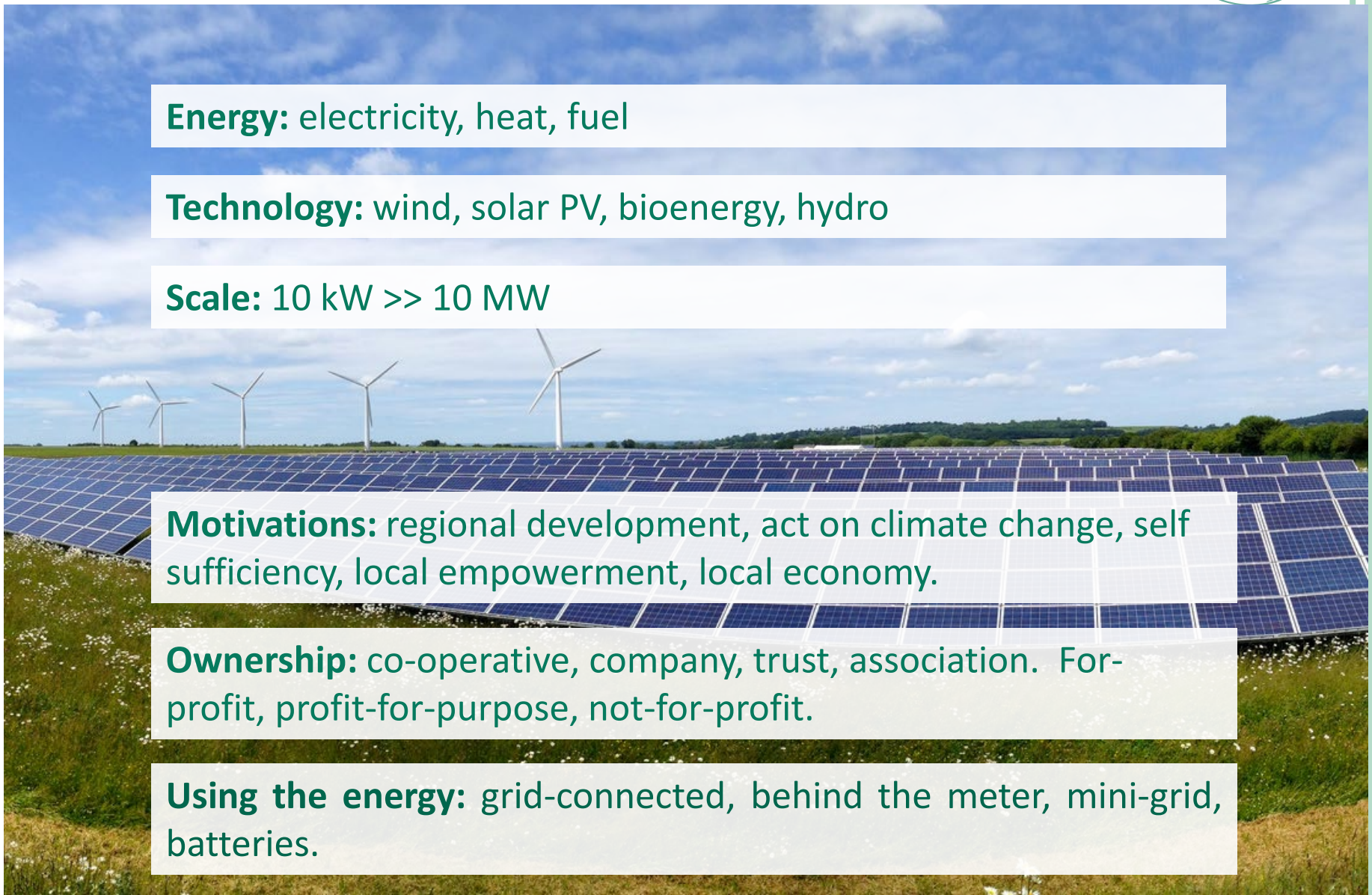

**Energy:** electricity, heat, fuel

**Technology:** wind, solar PV, bioenergy, hydro

**Scale:** 10 kW >> 10 MW

**Motivations:** regional development, act on climate change, self sufficiency, local empowerment, local economy.

**Ownership:** co-operative, company, trust, association. For-profit, profit-for-purpose, not-for-profit.

**Using the energy:** grid-connected, behind the meter, mini-grid, batteries.

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# Australian Renewable Energy


1 2 3 4 10 20 100 1000 10000 100000

kW

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# Australian Renewable Energy


**Community Owned Renewable Energy**

1 2 3 4 10 20 100 1000 10000 100000

**kW**

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# Benefits of CORE

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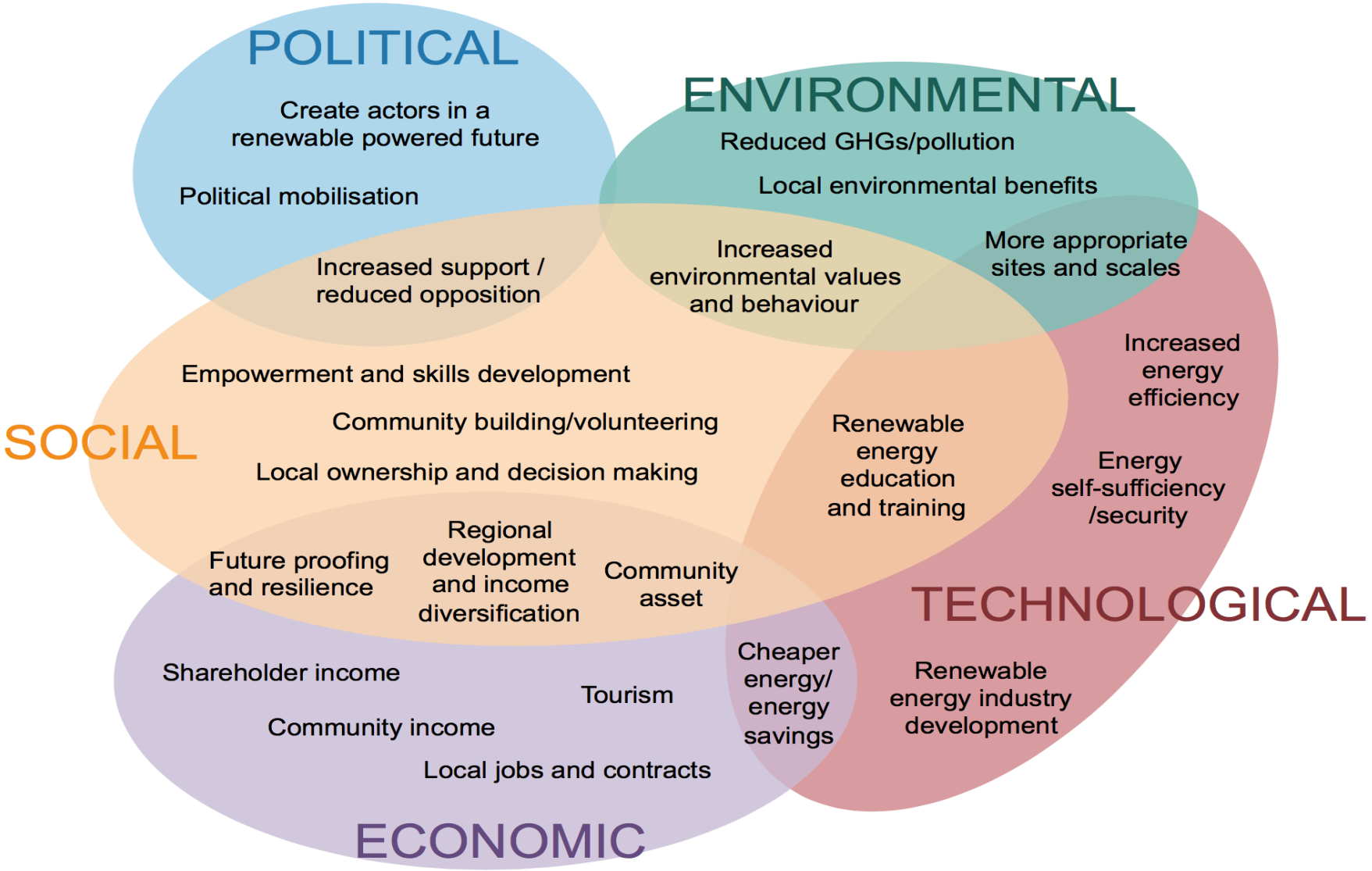

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# Barriers to CORE

- Highly centralised electricity systems
- Rules around energy retailing
- Changeable policy environment (RET uncertainty)
- Difficulty accessing upfront funding for early stages of CORE
- Negotiating with a host site with the right electricity demand profile, who ‘gets ‘ CORE and wants to participate
- Grid connection: costs, timelines, negotiation
- Financial regulations
- High prevalence of ‘locked-out’ energy users
- Lack of knowledge of existing programs & lack of technical expertise

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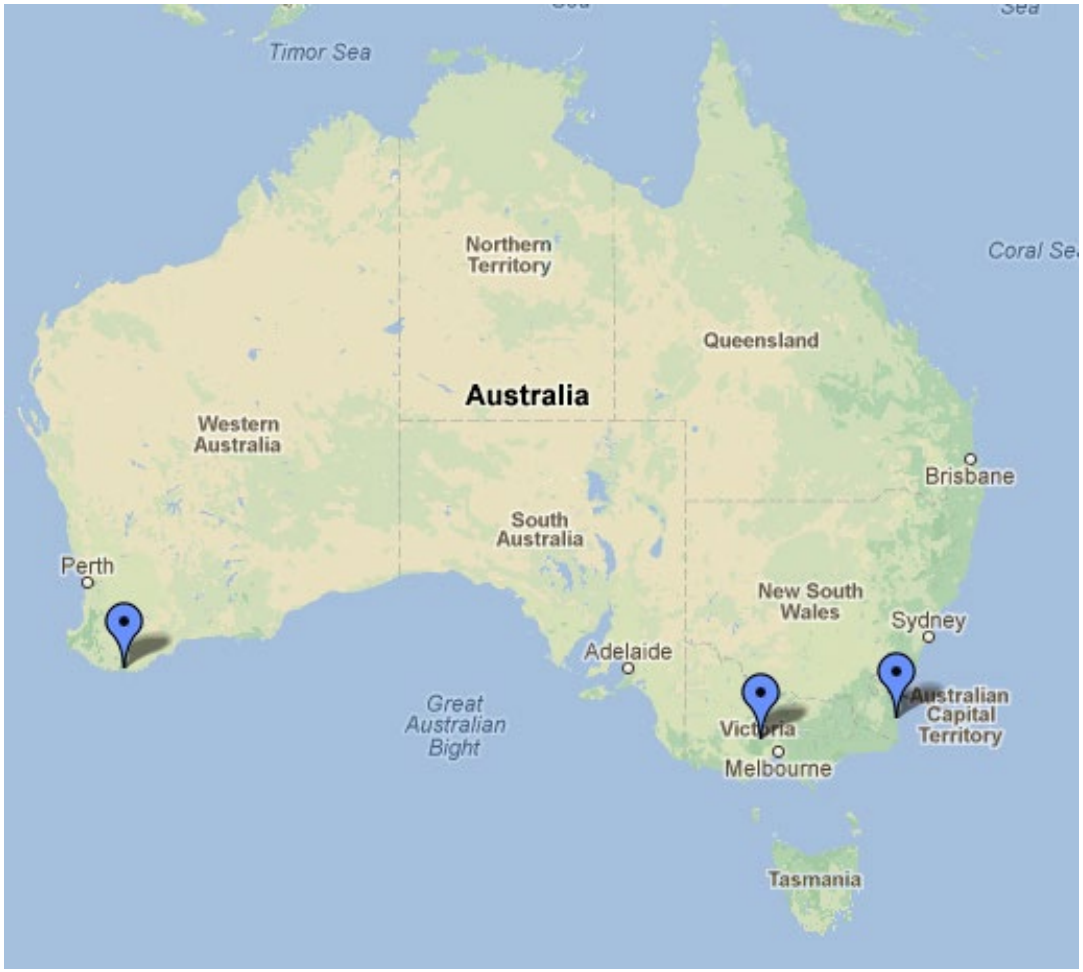
# CORE in 2009

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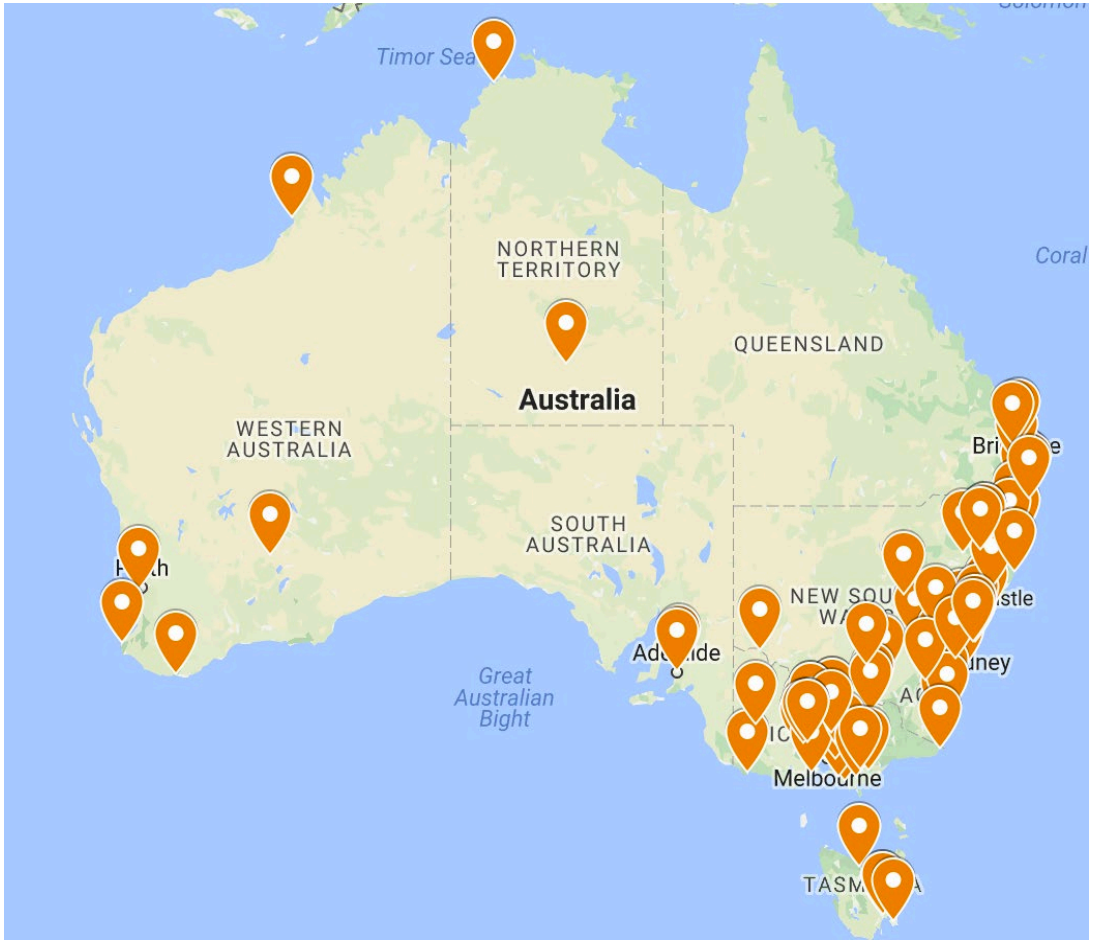
# CORE in 2020




110+ groups developing projects

90+ projects installed

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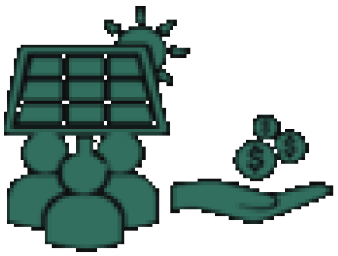
# Types of CORE Models



**Donation/community organisation models**
e.g. CORENA, The People's Solar, Bendigo Sustainability Group

**Community investment models**
e.g. REpower Shoalhaven, Hepburn Wind, Denmark Wind, Pingala, Sydney Renewable Power Company


**Commercial-community partnership models**
e.g. Clearsky Solar Investments, CENREC/ Infigen, CWP Sapphire

**Multi-household models of community energy**
e.g. Darebin Solar Savers, MASH bulk-buy

# SHASA: Eurobodalla Community Solar Bulk Buys

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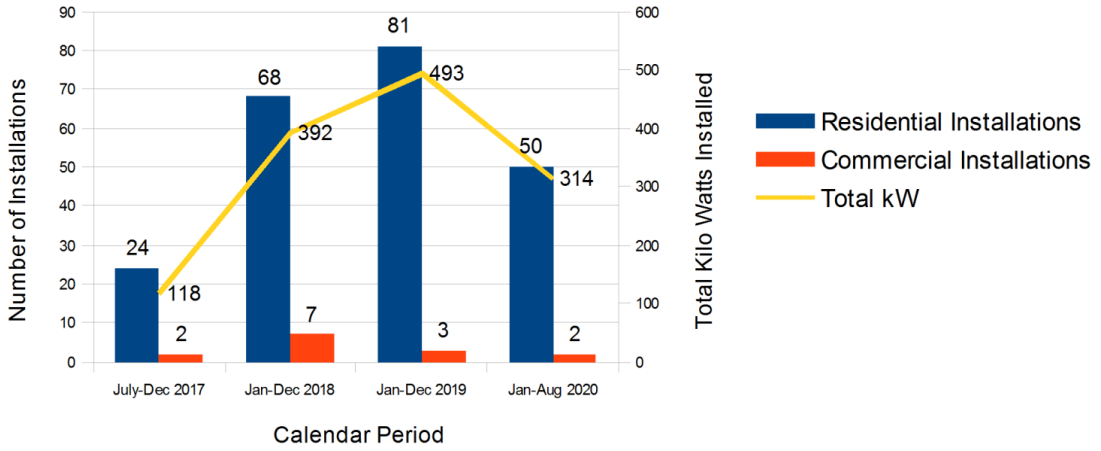
- bulk buy and install of solar PV and batteries (3-6kW each) on homes
- currently on Round 4
- run by local not-for-profit association – South Coast Heath and Sustainability Alliance
  - → in partnership with local solar installer – Micro Energy Systems Australia

# SHASA: Eurobodalla Community Solar Bulk Buys

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- provide education on how to best use energy from solar panels & how to increase energy efficiency

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# CORENA

- Collect donations
- Use funds to install solar on community buildings
    - E.g. kindergartens, halls, community services
- Host repays loan overtime (& eventually owns the solar)
- CORENA reinvests income into new projects
- $100 donated creates $179 in value in just 2 years!
- Have raised $315,000 & installed 202kW

CORENA Fund

Citizens Own Renewable Energy Network Australia

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# Lismore Solar Farm

- Lismore City Council hosts the 100kW solar farm at their sewage treatment plant
- Council receives renewable energy, electricity &emission savings, community/stakeholder partnerships & a high public profile!
- Council saves $24,000 per year & provides 12% of electricity needs of the sewage treatment plant

# Lismore cont'd

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- A community company raised funds via a Private Investment Offer from 20 community (impact) investors
- The funds raised were lent to Council to build the solar farm
- Council repays the loan with interest
- Community shareholders receive dividends over the term of the loan & their initial funds at the end of the loan

Video

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# Sapphire community co-investment

- 270MW, 75 turbines
- Generate the equivalent of 115,000 average homes
- Developed by corporate developer, CWP renewables
- Worked with community energy consultants to develop a community co-investment offer
- Local workshops & surveys informed co-design of co-investment

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# Sapphire cont'd.

- Offer for local people to invest first, then electorate of New England, then all NSW & ACT.
- Minimum investment per shareholder is $1,250
  - Max is $200,000
- 6% return paid quarterly
- Maximum community investment of $10m
- Community investment is pooled & acts as an unsecured loan to the project

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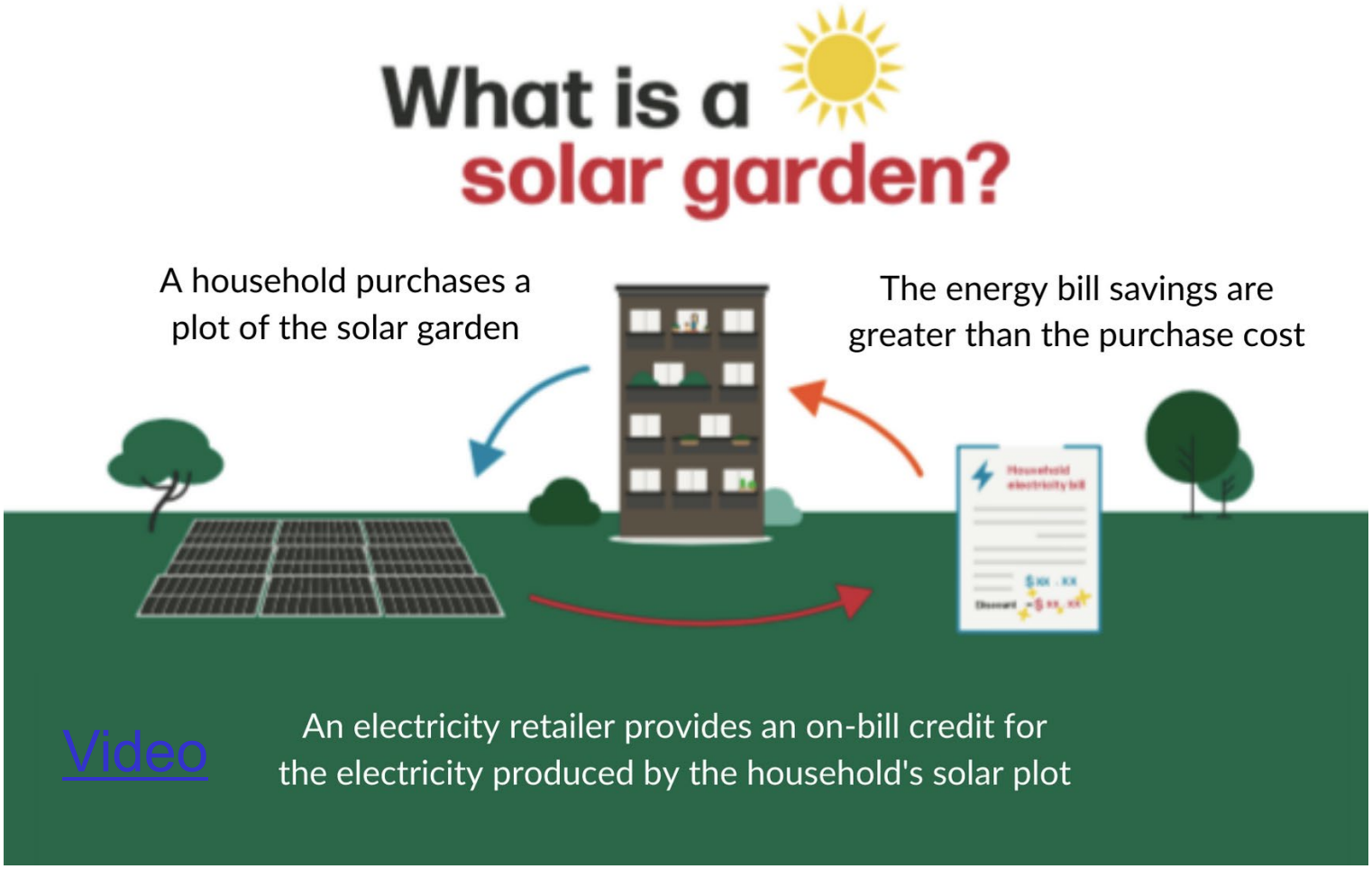
# Haystacks Solar Garden



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# Haystacks Solar Garden

## Solar Co-op

Phase 1: Development

- ✓ Prepare
- ✓ Co-op Memberships Open
- Community events
  - Online
  - In person
- Prospectus ready
- Solar Garden plots available

February 2020

## Solar Farm

Phase 1- Development

- ✓ Securing land
- Development application
- Grid connection
- Procurement

Visit …

https://haystacks.solargarden.org.au/

…to learn more!

- Operation & maintenance

2021

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# Networks and Links

- Community Power Agency and our resources
  https://cpagency.org.au/
- C4CE
  https://c4ce.net.au/
- Community Power Hubs
  http://www.communitypowerhub.com.au/
- Your local CE group!

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# Thank you!

franziska@cpagency.org.au

www.cpagency.org.au

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# Aspects of a Project

Content drawn from:
J. Hicks & N. Ison (2018) *An exploration of the boundaries of 'community' in community renewable energy projects: Navigating between motivations and context.* Energy Policy, Vol 113, pp. 523-534.

# Aspects of a CORE project:

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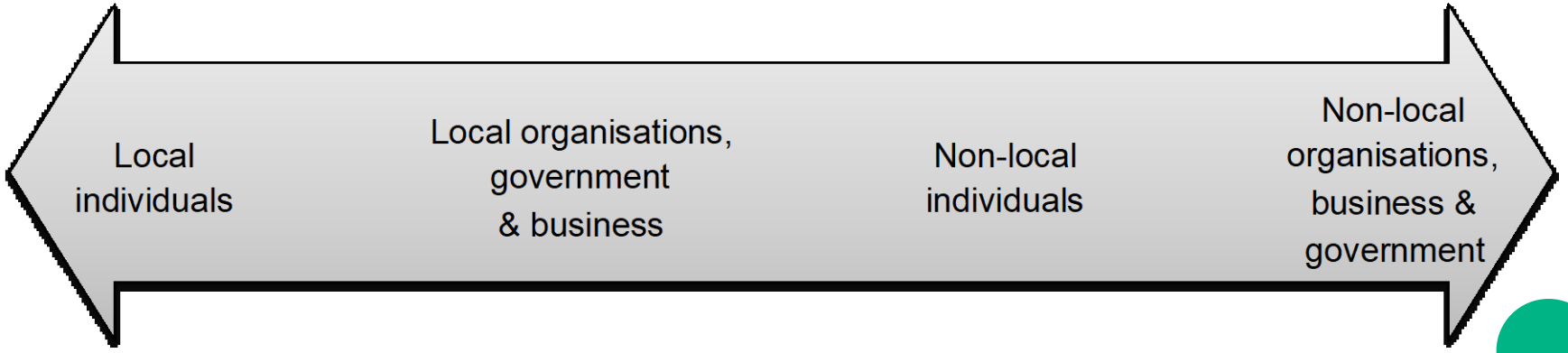
# Community involvement

- Who is the ‘community’ of the project?
  - Is it a community based on geography or interest?
  - What is the geographic scope?
- What actors are part of this ‘community’?
- How many people/ stakeholders do you want to involve?



# Community involvement

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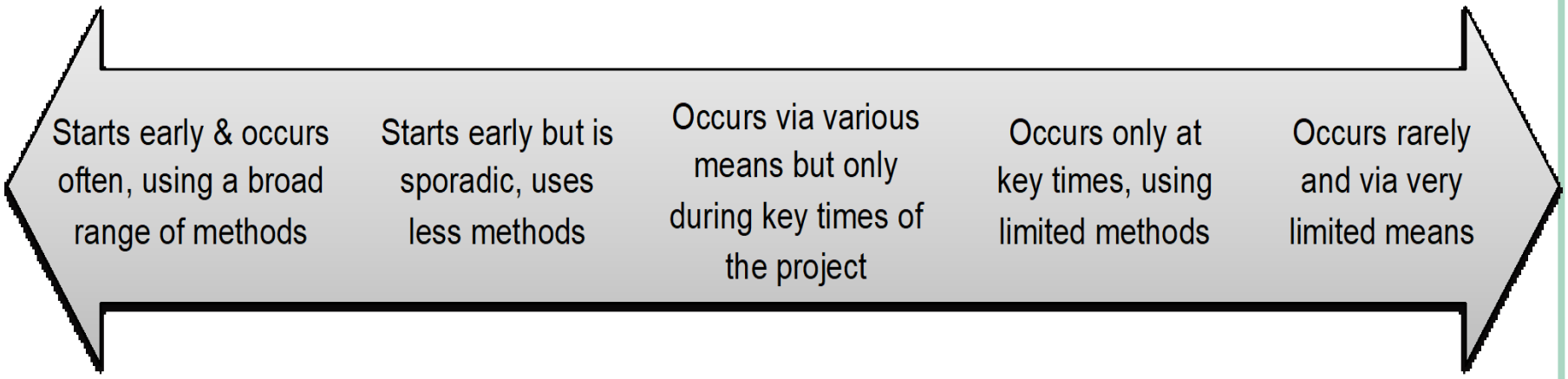
- How is this community of people involved/ engaged in the project?
- What level of influence do they have?



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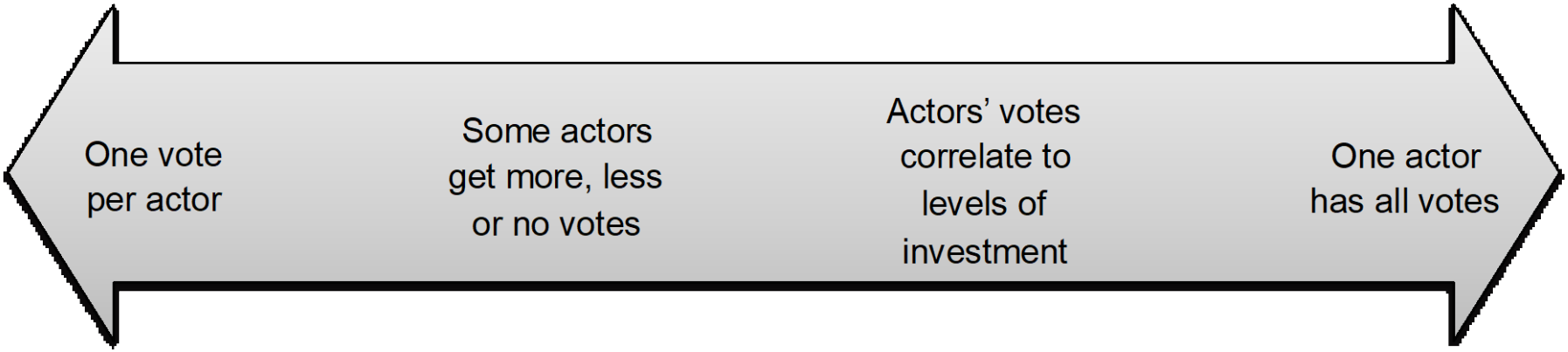
# Governance & Legal

- Who has ownership & decision-making control in the project?
- Which actors have power & influence?




In the set up of a legal structure, you need to think about:

- allocation of voting (per share vs per person)
- who is eligible for membership
- how many members you can have

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# Technical

- Is the project scaled to local electricity demand?
- Behind the meter? Or linked to a desire for the community to be net zero carbon?
- Linked to locally availably resources & local community desire


Will influence:

- Access to STCs/ LGCs
- Trigger different approvals & connection processes

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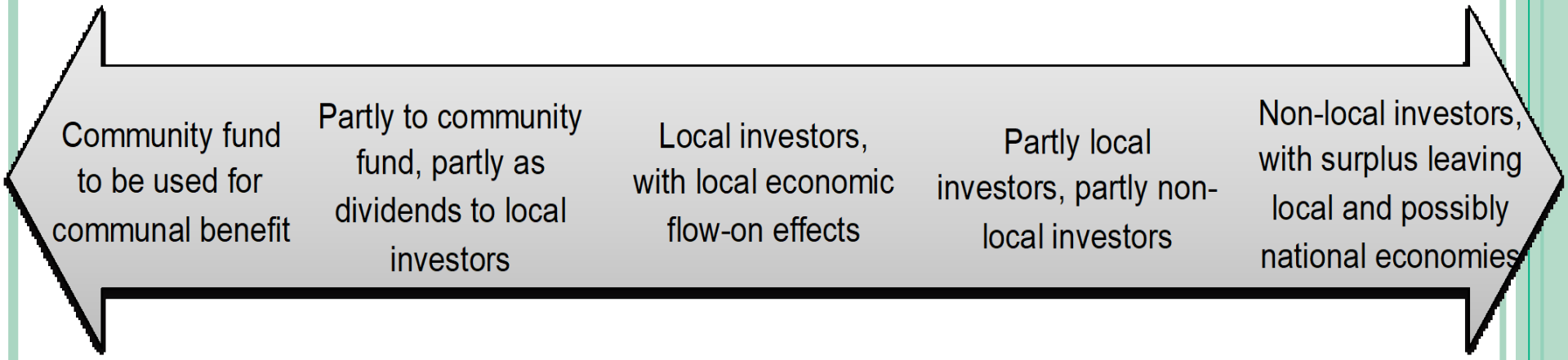
# Financial

- Where is the money coming from?
- Where is the financial benefit going to?




In the set up of a legal structure, you need to think about:

- the purpose / objectives of the organisation
- rules around the distribution of surplus/ profit
- any limits on fundraising (max $ amounts; crowdfunding)

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# Maximising Benefits

Economic impact of wind farms with local ownership versus those with external ownership:

| | Absentee/ Corporate owned | Community/ Locally owned |
|---|---|---|
| Germany | €7 million over life of project | €58 million over life of project |
| UK | £1,000-5,000 / MW / year | £200,000-300,000 / MW / year |
| USA | $13,000-55,000 / MW / year | $82,000-140,000 / MW / year |
| Australia | $500-1,200 / MW / year to community fund | $5,000 - 15,000 / MW / year to community fund |

Local jobs per MW of locally owned wind is 2x as many

# The net affect: Overall strength as a 'community' energy project

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