Community Energy Masterclass

C4CE COALITION FOR COMMUNITY ENERGY

community power agency

Community Energy Masterclass
North Cost Energy Forum

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Overview

1. Intro to Community Energy (CE)

   - history, impact & current status

2. What is CE?

   - definitions, actors, models

3. Developing a CE project

   - stages, funding, aspects

4. Community engagement

   - Principles, goals, activities, social license

5. Models in operation & development in Australia

6. Challenges & solutions

7. Further information

Community Owned Renewable Energy (CORE): An important part of the energy mix

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

Germany

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

Australian Renewable Energy

Utility Scale

1 2 3 4 10 20 100 1000 10000 100000

kW

Household Scale

Australian Renewable Energy

Utility Scale

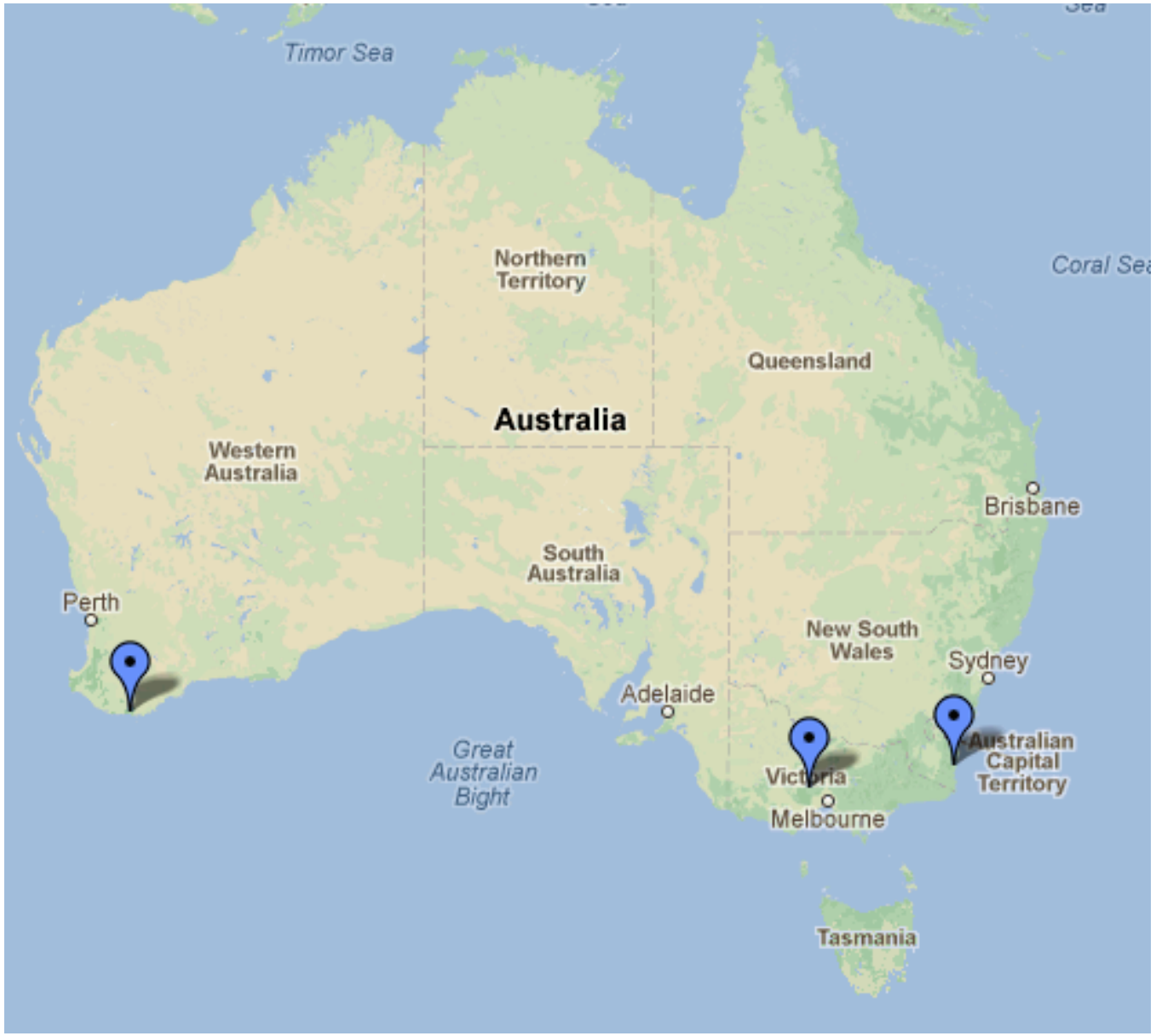
Community Owned Renewable Energy

1 2 3 4 10 20 100 1000 10000 100000

kW

Household Scale

Map of Australian Projects – 2009



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Map of Australian Projects – February 2014

Community participation in energy

Every project is different:

- **Demand & supply -** Energy efficiency, demand management & energy generation
- **Technology** – wind, solar pv, biomass digesters, small hydro
- **Scale** – 10kW → 10MW
- **Legal model** – cooperative, company, trust, association.
- **Motivations, values & benefits** – climate change, self-sufficiency, local empowerment, regional development, local income streams 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, p. 978)

4Ds of Community Energy

Community Renewable Energy Projects:

Decarbonise by using renewable energy or low carbon technologies;

Decentralise and localize energy supply;

Democratise governance through community ownership and participation; and

Demonstrate renewable energy technologies work.

Definition of 'COMMUNITY'

- A group of people living in the same locality or under the same local government area

(*a **geographic community**, eg. the Byron community)*

- Any group having common interests or similarities

(*a **community of interest**, eg. the scientific community)*

- Society as a whole; **the public.**

Possible actors in CRE:

- Individuals
- Local, state, federal government agencies
- Businesses/ Companies
- Not-for-profits/ community organisations

Models of Community Energy

- **Community Organisation**

  Community organisations such as trusts, not-for profits, schools etc. set up and own a renewable energy asset, typically small systems <1MW. Community involved by virtue of being members of the organisation.

- **Community Investor Cooperative or Company**

  Community members are owner investors in a cooperative or company structure that develops, finances and/or operates a renewable energy asset. Typically, 100kW-10MW in scale.

- **Developer and Community Partnership**

  Community sets up an organisation to partner with a renewable energy developer and purchases/owns part of a larger renewable energy facility.

"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 socially? Economically? Spatially?

Some benefits & motivations

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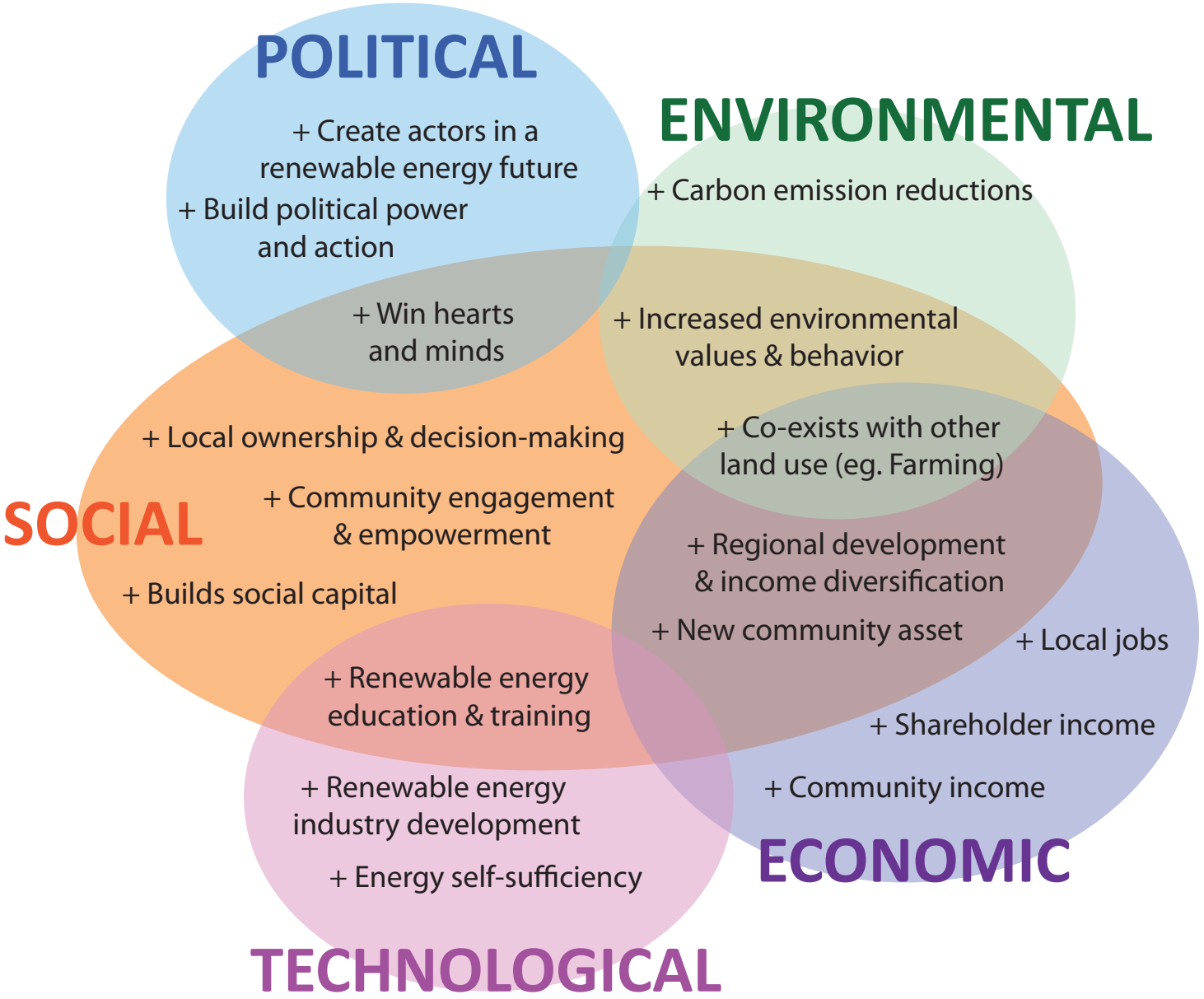
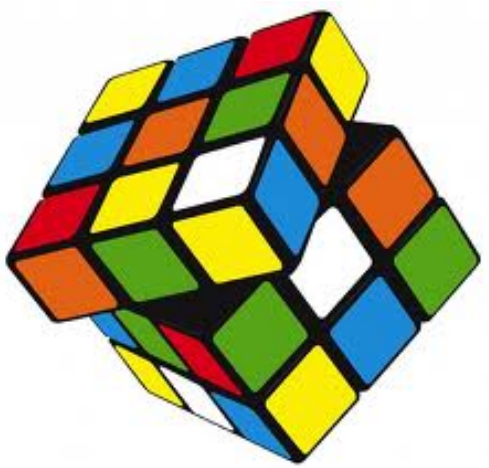


J Hicks & N Ison (2012) "Community Energy Generation", in Shepherd, A., Allen, P. and Harper, P. *The Home Energy Handbook:* Powys, Centre for Alternative Energy.

Developing a CE project

Involves solving a rubiks cube of factors:

1. Shared vision
2. Technology
3. Funding and financing
4. Organisational structure and governance
5. Community engagement
6. External factors (policy, physical etc)



Every community and each context is unique, hence the diversity of CE models. Even if you are using a proven model, it will involve tailoring it to local visions, needs & circumstances.

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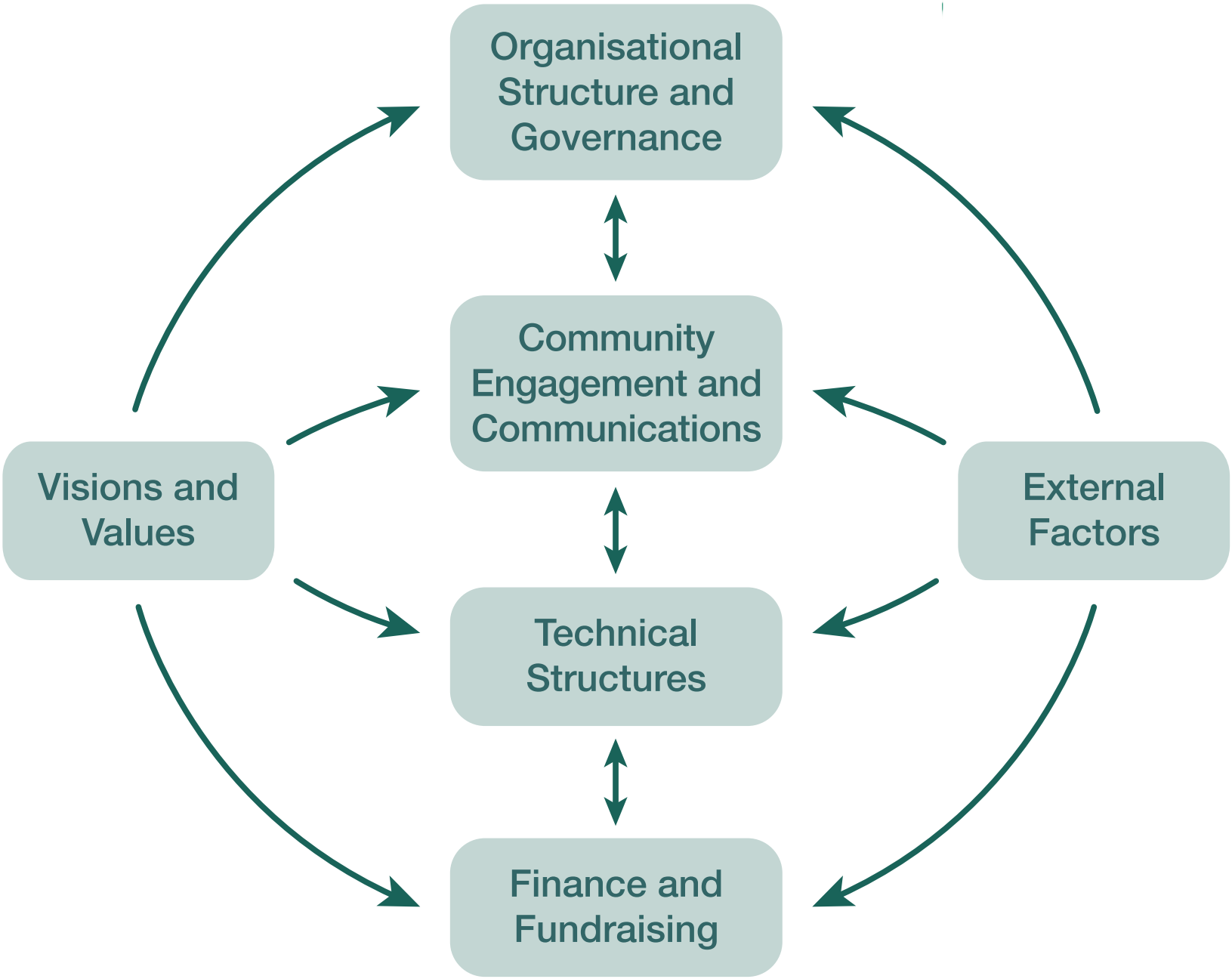


Project Stages

Initiation	A group comes together, sets their aims and starts to develop the project
Social Feasibility	Gauge the level of support for the project within the community as well as scoping at a high level what is technically and financially possible and desirable
Technical Feasibility	A full technical study is undertaken to design the technical side of the project, an organisational structure is established, and if appropriate, negotiations are initiated: both with the local distribution network operator regarding grid connection and one or more retailers regarding electricity sale Develop a business case
Planning	Planning approval is sought
Capital raising	Raising sufficient capital to enable the project to proceed to the construction phase
Construction	Equipment (wind turbine, solar panels and so on) are ordered, civil works such as foundations or roads are built, and the project is installed and connected to the electricity grid
Operation	Electricity is being generated; tasks in this phase include technical monitoring and maintenance and financial administration

Influence of values on organisation structures: negotiating tensions and trade-offs

- Ownership

Local individuals ⟷ Non-local organisations

- Decision Making

1 vote per person ⟷ One investor has all votes

Cap on level of votes via # of shares

- Where the money goes

All profit to a community fund ⟷ All to investors

Community Engagement in CE

- Ideally, the participation of community members in all phases of project development, operation and benefit.

- Recognises the capacities present in the community to contribute to the design and delivery and to identify and participate in devising effective solutions to experienced challenges

- *community engagement* can cover a range of activities, reflecting different desired depth of engagement

- In renewable energy development generally, has encompassed varying degrees of commitment to genuine participation in directing the process and outcomes of developments

"*Marrying the term 'community' to 'engagement' shifts the focus of engagement from individuals to the collective and to seeking development outcomes that consider the diverse needs that exist within any community*"

VIC DSE 2005

Community Engagement Principles

- **Shared benefit**: whole community, shareholders, employees, neighbours, hosts, etc.
- **Mutual respect**: including those with different perspectives!
- **Transparency**: from project inception right through; reporting back.
- **Relationship-building**: long term participation as a community member.
- **Responsiveness**: listening and adapting.
- **Authenticity**: do what you say you will; maintain integrity.
- **Appropriateness**: suited to local context.
- **On-going Engagement**: community outreach & opportunities for participation through all project stages.

Lane & Hicks 2014

Win hearts and minds – they will become your advocates & investors!

Spectrum of Public Participation (IAP2)

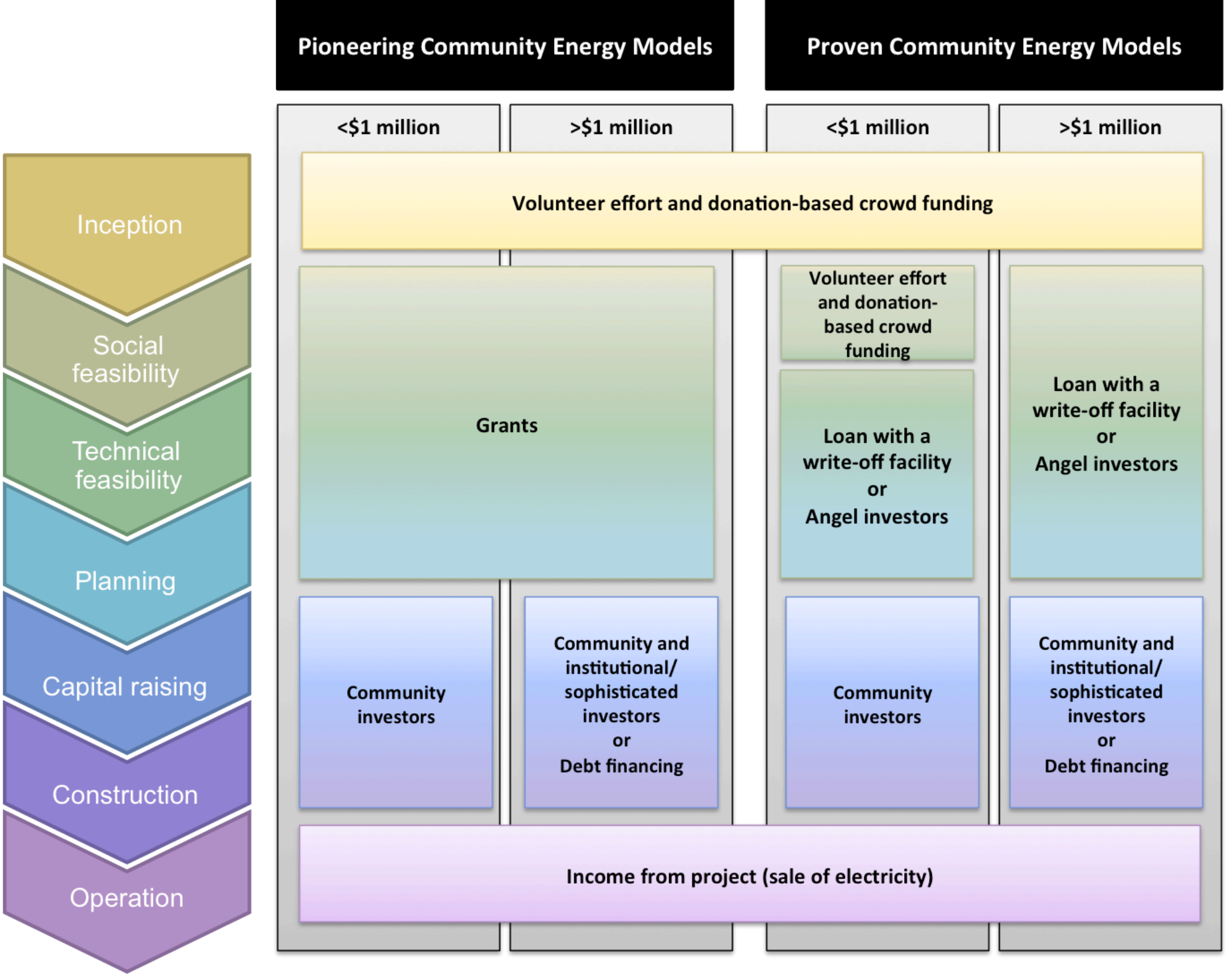
	Inform	Consult	Involve	Collaborate	Empower
Community engagement objective	• provide balanced and objective information • assist community in understanding the problems, alternatives and/or solutions	• obtain feedback on plans, options and/or decisions	• work directly with community throughout the process, from feasibility through operations and decommissioning • ensure concerns and aspirations are consistently understood and considered	• partner with community in each aspect of planning, development and decision making , including the development of alternatives and the identification of the preferred solution	• for the community to lead the development of the wind farm • place final decision-making in the hands of the community
Promise to community	• to keep the community informed	• to keep the community informed • listen and acknowledge concerns • provide feedback on how community input influenced the decision	• to work with community to ensure concerns and aspirations are directly reflected in the alternatives developed • provide feedback on how community input influenced the decision	• look to community for direct advice and innovation in formulating solutions • incorporate advice and recommendations into the decisions to the maximum extent possible	• to implement what the community decides
Community engagement outcomes	• securing landowner sites • gaining planning permission • meeting compliance regulations	• minimising objections • effectively managing complaints • good landholder relations • a level of community trust	• long term broad local social acceptance of the wind farm • strengthened local relationships and trust • local advocates	• community-developer partnership where a portion of the wind farm is owned by local community • greater community benefit • a welcoming and supportive host community • strong local relationships and trust • timely development of the wind farm	• benefit sharing model tailored to the local context • community scaled project • harness the skills and capital of the community • upskill community members to manage the project • largely community owned and controlled

Lane & Hicks 2014

Community Engagement: Activities & Stages

Initiation	Visioning workshops, attracting a skilled team, ideas competitions, stalls, strengths & asset mapping, stakeholder mapping, host site scoping etc.
Social Feasibility	Drop in information sessions, news column, presentations, one on one meetings, group forums/ workshops, surveys, EOI for host sites, etc.
Technical Feasibility	Live data/ results display, photomontage, detailed information displays & website, engaging local organisations (eg. Landcare, bird watchers, indigenous) & consultants to assist/ lead, on going presence in the community (eg stalls, events), tours to other similar projects.
Planning	Investment pledges, partner with local businesses, information sessions, surveys, reporting back via multiple communication channels.
Capital raising	Public launch of share offer, stalls, public meeting, multiple communication channels, etc.
Construction	Involve local businesses & tradespeople, ‘sod-turning’ celebration, multiple communication channels
Operation	Open days, festivals, stalls at events, film/ education nights, schools programs, grant fund, social media, website, etc.

Mount Alexander
COMMUNITY
WIND
GREENHOUSE SOLUTIONS
SUSTAINABLE ENERGY


Pioneering Community Energy Models
Proven Community Energy Models
<$1 million
>$1 million
<$1 million
>$1 million
Inception
Social feasibility
Technical feasibility
Planning
Capital raising
Construction
Operation
Volunteer effort and donation-based crowd funding
Grants
Volunteer effort and donation-based crowd funding
Loan with a write-off facility or Angel investors
Loan with a write-off facility or Angel investors
Community investors
Community and institutional/ sophisticated investors or Debt financing
Community investors
Community and institutional/ sophisticated investors or Debt financing
Income from project (sale of electricity)

Operating CE projects in Australia

Hepburn Wind, Cooperative (VIC)

Denmark Community Windfarm Ltd. (WA)

CORENA

- Gawler Community House, Gawler (SA)
- Tulgeen Disability Services, Bega (NSW)

Repower Shoalhaven

- Repower One – Bowling Club, (NSW)
- Kangaroo Valley Community Centre (NSW)

Clear Sky Solar Investment Trust (NSW)

- Boggabri
- Parkes
- Griffith
- Bathurst

Mooreland Energy Foundation

Community Wind Cooperative

- 2x2.1MW Wind Turbines (RePower)
- Began generating June 2011
- Cost $12 million
- 2,000 Cooperative members,
  51% local people
- $15k per turbine per year re-invested into a Community Fund
- Neighbourhood benefit package
- Enough power to supply 2,300 local homes
- Sell electricity to the grid (Red Energy)
- Sell RECs to Red Energy, local council & others

www.hepburnwind.com.au

Community Wind Company

- 2x 800kW Enercon turbines
- Began generating Feb 2013
- Cost $6 million
- Approx. $2 million in grants
- Public Company
- 116 shareholders, 100 are locals
- Initiated, developed and operated by local people
- 200,000 shares owned by DCW Inc, not-for-profit association, to the value of the ‘sweat equity’ that local people contributed to getting the project going
    - Dividends distributed via community fund
    - Aprrox $10,000 per year

Denmark Community Windfarm Ltd

www.dcw.org.au

Community-developer partnership wind farm

- Not yet an operational model
- Community energy cooperative owns a number of turbines or a percentage in a larger renewable energy development.
- Coops plays important role in community engagement and communications – as well as ensuring and facilitating greater community benefit.
- Developer oversees the development of the project, including all technical and financial aspects.
- Partnership can involve having a community coop representative on the wind farm board; early est. and deeper engagement via community committees; co-development of community engagement & communications plans and of the benefits distribution.

www.cenrec.com.au

CENREC
CENTRAL NSW RENEWABLE ENERGY CO-OPERATIVE

infigen

Community NFP/ Donation-based Solar

Citizens Own Renewable Energy Network Australia (CORENA) est. April 2013

- not-for-profit incorporated association
- an on-going nation-wide donation mechanism to collectively fund renewable energy installations on community buildings
- uses crowdsourcing / crowd funding approach
- lends donated funds (interest free) to pay for small and medium-scale projects
- Loans are repaid as savings are made on power bills
- Money goes into a revolving fund
- Operational:
  - 7kW at Bega disability services facility
  - 10kW at Gawler Community Centre
- Ultimate goal is to establish a $5 million citizen-owned solar thermal plant
- Reliant on voluntary labour

http://corenafund.org.au/

CORENA

Community Company Solar Ownership

- Repower Shoalhaven
- Est. 2013 as a not-for-profit association
- Moved to company structure to deliver the projects: Repower One Pty Ltd.
- First project: 99kW solar PV system on Shoalhaven Heads Bowling Club.
- 20% funded and owned by the Bowling Club and
  80% funded and owned by the community
- Community share: $119,800
  - 20 investors minimum share of $ 6000
- Investor rate of return is forecasted with 7.86% p.a.
- Repower Shoalhaven collects an administration fee
- Bowlo buys all power produced
- At end of 10 years, Bowlo will own the system

http://www.repower.net.au

REPOWER SHOALHAVEN

SolarShare
CANBERRA

REPOWER SHOALHAVEN

How it works

Clean, solar electricity

Business saves money by paying affordable solar electricity bills

$

Local people win

1. Can invest in local solar projects
2. Solar is accessible to all (ie. Renters)
3. Money stays local

REPOWER SHOALHAVEN

Community members earn money by collectively installing a solar power system on roof of business

$

Local businesses win

1. No upfront cost + debt free
2. Lower electricity costs and price certainty
3. System gifted to business at end of term
4. Clean, locally owned power supply

www.repower.net.au

Community Trust Solar

- Clear Sky Solar Investments (CSSI)
- A not-for-profit company limited by guarantee Est. June 2013
- Establishes a series of Trusts, one to manage each of their 6 projects
- Projects: 10 – 60 kw solar PV installed ‘behind the meter’
- Each trust: max 20 investors
- The investment model involves three parties: the end user/ host, Smart Commercial Solar (trustee company) and the Trust
- Panels owned by the trustee company
  - After 7 years ownership is transferred to the host
- Host buys all energy produced, securing their energy prices into the future
- Estimated rate of return: 9%

ClearSky
SOLAR INVESTMENTS

http://www.clearskysolar.com.au

Community-funded loan

Farming the Sun by Starfish Enterprise & Embark (Sydney Renewable Power Company)

•Not yet an operational model (but very close!)

•Community members and organisations pool micro-investments to fund (rather than own) solar installations

•Using a Company structure

•Community are shareholders/ investors in the company

•Hosts/ partners install and own solar PV (80kW-1MW) using debt finance from the community company

•Benefits: host accesses cheaper and guaranteed loan; community investors receive dividends on investment.

•Potential partners include Local Council (eg. Lismore City Council) and industry

http://starfish-initiatives.org/

Sydney Renewable Power Company

Community Organisation Solar Bulk-install

Mooreland Energy Foundation (MEFL) in partnership with the Mooreland City Council:

•Project manages install of PV on roofs of pensioners who own their own homes

•Council provides interest free loan to eligible households

•Households pay back loan as additional fees on rates notices over a 10 year period

•Council included notice of program in rates letters

•MEFL met one on one with households to do home energy audit, energy efficiency and assess viability of PV

•Uses Environmental Upgrade Agreements (EUA)

•Est. 2014, currently in installation phase – approx. 1MW across 300 homes

http://mefl.com.au/

Moreland Energy Foundation

Model status and replicability

Community Models

Category 1

Proven models that are operating in Australia that, with a small amount of support, could be replicated in other communities/locations.

Clear Sky Solar - investment trust

Moreland Energy Foundations - Environmental Upgrade Agreements

CORENA – donation based

Category 2

Proven models that are operating in Australia that, with significant funding support and removal of key barriers, could be replicated in other communities/locations.

Hepburn Wind - energy cooperative

Denmark Community Wind Farm – energy company

Category 3

Unproven models which look promising, may get over the line with support and that, with a small amount of support/adaptation, could be replicated in other places

Embark/Sydney Renewable Power Co &

Farming the Sun - community-funded loan

Category 4

Unproven models that are in development and are entirely unique to a particular context or will require significant adaptation to replicate.

Some Challenges

- Political uncertainty: Renewable Energy Target, carbon price, ARENA & CEFC
- Financing: esp. early stage development for projects (from inception to planning approval)
- Grid connection: costs, timelines, negotiation
- National Electricity Market: getting a fair price for electricity produced

Top Challenges by Technology and Stage

Stage	Top Barrier	Technology	Top Barrier
Initiation	• Financing the developmental stage • Having access to the necessary skills to develop your CRE project	**Solar PV**	• Getting a fair price for the sale of your electricity • Finding appropriate partners and negotiating associated agreements
Social Feasibility	• Having access to the necessary knowledge to develop your CRE project	**Wind**	• Community response (getting support and/or responding to opposition)
Technical Feasibility	• Financing the developmental stage	**TBD (wind, solar and/or bioenergy)**	• Other

Response to Challenges

- Establishing the national Coalition for Community Energy (C4CE) with strategic initiatives addressing barriers (eg. NEM rule change for virtual net metering)
- Developing & implementing a National Strategy to address key barriers
- Advocacy campaigns: Fund Community Energy & Community Energy RET campaigns

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C4CE COALITION FOR COMMUNITY ENERGY

- Guide & support development of the community energy sector
- Create a coordinated voice to better advocate for the needs of the sector

  - Creating a National Community Energy Strategy (ARENA funded)
  - Participating in public debates & advocacy
  - Supporting skills development
  - Participation in NEM review & rule change processes

→ C4CE is now open for membership

www.c4ce.net.au

More Info…

- Community Owned Renewable Energy: A How to Guide
  (2014) N Ison, J Hicks, J Gilding & F Mey – www.cpagency.org.au/resources
- Best Practice Community Engagement in Wind Development
  (2014) T Lane & J Hicks - www.cpagency.org.au/resources
- Embark Wiki – www.embark.com

Email: jarra@cpagency.org.au
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