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## GOVERNMENT SUPPORT OPTIONS FOR COMMUNITY ENERGY: BEST PRACTICE INTERNATIONAL POLICY

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## ABOUT THE AUTHORS - COMMUNITY POWER AGENCY

The Community Power Agency was established in 2011 to support the growth of a vibrant community renewable energy sector in Australia. We work with communities to strengthen capacities to develop community owned renewable energy projects. We also collaborate with a range of organisations at a national level to address policy and systemic barriers facing the sector. Our vision is for a fair and sustainable energy sector that provides real benefit for more Australians and our environment.

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## Introduction

The UK, Scotland, Denmark, Germany, Sweden, the Netherlands, Austria, several states of the USA, Ontario state in Canada, Thailand, Japan, South Africa and the NSW State Government, among others, all have policy incentives targeting community scale and community owned renewable energy enterprise. Successful funding and financing policies implemented in these countries represent a diversity of approaches, including: feed-in tariffs, tax-incentives, grants, low-interest loans and incentives to secure commercial loan finance. Usually, these policy initiatives are accompanied by a number of congruent policy mechanisms aimed at enabling community projects to connect to the grid, negotiate fair power purchase agreements and access support – all of which are crucial non-financial policy programs. Policies to support community energy projects have been implemented by national, state and quasi-state agencies, as well as in partnership with business and not-for-profit organisations.

The sections that follow will outline and provide examples of a range of financial and non-financial policy options available to support the development of a community energy sector.

### Financial policy support options:

1. Grant funding
  - i. Potential impact of a \$50 million grant fund
2. Loans
  - i. Low interest government loans with a write-off facility
  - ii. Incentives to secure commercial loan finance
3. Tax incentives
  - i. Income tax exemptions
  - ii. Accelerated Depreciation
4. Differentiated Feed-in-tariffs

### Non-financial policy support options:

1. Support & Coordination
2. Guaranteed grid-connection
3. Electricity distribution options
  - a. Guaranteed Power Purchase Agreements with Retailers
  - b. Virtual Net Metering
4. Monitoring and Evaluation

The implementation of community renewable energy support policies such as these should, like any good policy initiative, be seen as medium term support to transform a fledgling sector with significant promise, into a vibrant and self-sustaining sector that will deliver a multitude of public good.

The policy options below may each be implemented singularly, or several options packaged together for stronger outcomes, as is often done in international examples. Further, some policy options will be better suited to different stages of the development of a community energy sector.

## Financial policy support options

### Grant funding

Both internationally and in Australian states, grant programs have been established to support community energy projects to reach the investment-ready phase, especially when the sector is undergoing early phases of development. This section provides an overview of grant funding received by Hepburn Wind from Sustainability Victoria, the Scottish Community and Renewable Energy Scheme (CARES), the Welsh Ynni'r Fro Programme. Other notable examples of grant

programs that are not outlined here are Germany, Ontario in Canada and UK's Regional and Urban Clean Energy Funds.

Grants are typically government funding schemes that community energy projects can access to cover the first 10-20% of costs needed to become investment ready. Funded activities include paying a project coordinator, performing community engagement and profile raising activities, paying expert contractors and/or conducting any of the many other tasks that it requires to develop a community energy project.

Such funding programs have stipulations to ensure funded projects are an effective use of public funds and in order to ensure multiple co-benefits such as carbon reduction, job creation, community development etc. are achieved (see activity method section below). Such funding programs are often delivered via milestone achievements that trigger the release of further funds. In a number of cases, grant programs transition to become loan programs once the community energy sector is established and has passed pioneering stages. The most effective grant programs are those which offer milestone based funding to cover costs to investment-ready stage and are offered along side other support mechanisms, such as mentoring, access to technical advice and/or grid connection guarantees.

### **Germany**

While at a national level Germany engages communities in renewable energy through a Feed-in Tariff, the state level offers grants and loans to support community renewable energy projects such as co-generation, wind farms or solar PV.

For example the state Baden-Wuerttemberg in Germany offers grants of up to 200,000 Euro for investments into renewable energy for heating for bioenergy villages. Local government bodies as well as community projects are eligible under this program. The program has enabled the establishment of 69 bioenergy villages, and 33 more projects are in the pipeline (Ministerium fuer Umwelt, Klima und Energiewirtschaft Baden-Wuerttemberg, 2014).

Similarly, the state of Bavaria offers grants for community projects of up to 40% of costs (up to a maximum of 40,000 Euro) to conduct feasibility studies, pre- assessments including planning and legal advice (BMWE, 2014).

### **Hepburn Wind**

Hepburn Wind (HW) received feasibility stage grant funding from Sustainability Victoria (SV) totaling almost \$1million. This funding was made available to HW as they met agreed milestones over a 3-4 year period. As Hepburn Wind's Chair, Simon Holmes a Court, explains:

“The SV funding was absolutely crucial to the success of the project. The first two phases of the grant funding (totaling \$189k over 15 milestones) worked to significantly de-risk, enabling HW to enter into a development agreement that effectively shielded the community investor from development risk. The third phase of the grant funding (totaling \$786k over 10 milestones) represented approximately 80% of the grant. As such, the bulk of the state government's commitment to the project was not due until the project's success was virtually assured. This phase of funding had the effect of lifting the rate of return to meet investors' performance expectations.

The non-financial support of SV was also highly valued, covering advice across a wide range of areas, assistance with modelling, referral to professional services and valuable moral support to the project.”

[www.hepburnwind.com.au](http://www.hepburnwind.com.au) | [www.embark.com.au](http://www.embark.com.au)

## Scotland

The Scottish Parliament has provided funding support for community renewables since 2002. In 2009, the CARES program was introduced as an update to previous grant programs. In June 2011, in response to strong uptake of CARES, the Scottish Government set a target of 500 MW of community owned renewable energy capacity in place by 2020. Already, as of June 2012 there are 300 community owned renewable energy projects operating with a combined capacity of over 204MW. A further 647MW of community owned renewable energy capacity is estimated to be in different stages of development.

CARES aim was to support the development of locally-owned renewable energy projects which provide wider community benefits such as:

- Reduce carbon emissions;
- Reduce community reliance on imported energy increasing self-sufficiency;
- Increasing renewable energy capacity in Scotland;
- Reduce energy bills; and
- Provide added value for communities: jobs, economic benefit, awareness raising, etc.

The CARES grant program was available to cover costs associated with the pre-planning consent (high risk) stage of project development. Example activities funded included:

- Feasibility studies or community consultation
- Staff coordination
- Capacity building (renewable energy education, training and skills development)

Preference was given to proposals that demonstrated highest value of wider community benefit. Eligibility was based on organisation type and a short list of essential project criteria. Covered all forms of commercial renewable energy. Essential criteria included an energy efficiency assessment, demonstrated community benefit, involvement and support, technical viability and access to those seeking to replicate the project (CES 2010).

## Wales

In 2010, the Welsh Assembly established Ynni'r Fro to support community scale renewable energy. The reasons for supporting community energy were stated as:

*Community scale renewable energy can mean lower costs per kilowatt installed and can give the opportunity to deliver cheaper energy and greater emissions reductions. Acting as a community brings additional benefits to its members through direct benefits from any surplus from the sale of the energy generated and by building a sense of collective action and purpose within the community.*

Grant funding of up to £30,000 was available to fund early stage activities (pre-planning approval) without which the community renewable energy sector would not have been able to launch pioneering projects.



## Potential Impact of a \$50 million community energy grant fund

A report commissioned by The Coalition for Community Energy has modelled the impact of a Grant Fund at three levels: \$15m, \$50m and \$100m (funded over four years) out to 2040. Modelling found that **\$875m co-investment is realised at \$50m fund size.**

### Expected benefits of a \$50m grant fund are:

- 142,450 investors, across Australian regions
- \$875m total investment across 153 operational projects
- investment to grant leverage ratio of 17:1
- 326 MW installed capacity
- peak employment of 1,145 and maintenance employment of 137
- 4,277 volunteers by 2025
- range of technologies: solar (91), biomass (14), hydro (4), wind (44)
- abatement of 19.6 MTCO<sub>2</sub>.

### Program design

- Grant levels are optimised for the technology and project characteristics
- Grants only cover early stage costs: technology assessments, feasibility studies, planning documentation, community engagement
- Grants may not be spent on any post-planning approval or capital works
- No grants will be made to commercial developers who include community renewable energy elements in projects
- Grants are disbursed in tranches, against project milestones under agreed activity methods (see section below)

*For more information see 'Community Renewable Energy Fund' modelling report by Marsden Jacob Associates for the Coalition for Community Energy, June 2013, available at [www.cpagency.org.au/resources](http://www.cpagency.org.au/resources)*

## Germany

One of the major schemes that incentivises the deployment of renewable energy is the support program of the government-owned German Development Bank (KfW). Loans by the KfW bank have stimulated 10 billion Euro of investment, which comprises 51% of all renewable energy investments in Germany in 2012. Not only large investors but also community projects and individuals can benefit from this loan funding scheme for renewable energy. Loans cover up to 100% of the capital costs and offers favorable terms (KfW, 2012).

Another example of financial support through loans is the regional bank of Baden-Wuerttemberg (a state-owned bank). L-Bank offers interest-reduced loans particularly for community wind projects, which can be up to 10 million Euro and cover up to 100% of the investments costs for wind projects owned by local communities (BMWE, 2014).

## Tax incentives

A number of tax incentives targeting community owned renewable energy development have been implemented internationally with high degrees of success. There are three general forms: income tax exemptions, production tax credits and accelerated depreciation.

## Income tax exemptions

### Denmark

In Denmark, individuals are encouraged to own shares in wind cooperatives in several ways, including tax exemptions from income earned on dividends. As Prof Gipe (2011) summarises:

“Danish law encouraged mutual ownership of wind turbines by exempting owners from taxes on the portion of the wind generation that offset a household's domestic electricity consumption. A wind coop would then buy a wind turbine, site it to greatest advantage, sell the electricity to the utility, and share the (tax-free) revenues among its members”. The threshold of shares have changed over time, in 1996 the tax-exempt ownership threshold was increased to 9,000 kWh per year or 150% of household consumption

([www.repp.org/repp\\_pubs/articles/issuebr14/02Denmrk.htm](http://www.repp.org/repp_pubs/articles/issuebr14/02Denmrk.htm)). This, among other support policies, has incentivized over 150,000 households now own shares in wind farms in Denmark.

## Accelerated Depreciation

### Minnesota, USA

Minnesota in the US has implemented a unique combination of production tax credits and accelerated depreciation that has encouraged community and developers to partner to deliver renewable energy projects (Windustry n.d.). As at 2010, Minnesota has 230MW of community-owned wind turbines (Gipe 2010), most of which were owned by groups of farmers installing one or two turbines on farmland (Minwind n.d.). Their experience has found that such initiatives help to compliment fluctuating farming income and make regional areas more viable (Minwind n.d.). Such tax incentives are available in most states in the US (KPMG 2013).

“After the Fukushima earthquake, Japan introduced several significant incentives to support the move from nuclear to renewable energy sources. These include a special depreciation of 30 per cent or 100 per cent for the purchase and installation of qualified renewable energy equipment” (KPMG 2013: 4)

## Differentiated Feed-in Tariff

Internationally, Feed-in Tariffs (FiT) are a favored policy to support the take up of renewable energy, having been implemented in some form in 19 European countries, at least six US states and at least nine other countries across the world. The best examples of FiT policies that support community projects are found in Germany, Ontario and UK.

### Germany

Germany's Feed-in Tariff, first introduced in 1990, was the first national Feed-in tariff and has perhaps been the most successful to date. The tariffs legislated are optimized for different technologies at different scales, with premiums available to incentivise additional benefits such as community participation and local economic retention. The policy has supported the development of a wide range of different community energy projects. Citizens now own over 50% of Germany's installed renewable energy capacity (German Renewable Energy Agency 2013). Examples include:

- Over 200 bioenergy villages, such as Juhnde in central Germany which is a co-operatively owned community anaerobic digester system, which produces 700kW heat and 700kW electricity for the village using local crops, manure and wastes;



- Community owned wind farms such as the 150MW Burgerwindpark in north-west Germany and the six turbine Freiburg city wind-farm; and
- Developer/community partnerships such as the 62MW Dardesheim wind farm.

### **Ontario**

The Canadian State of Ontario implemented a FiT policy in 2009 under the Green Energy Act. This Act is designed to support a cross section of CRE projects through offering differentiated FiT rates based on technology type, size, location and ownership. The FiT supports wind, hydro, solar, bioenergy developments, generally up to 10MW. It offers premiums based on project ownership, with bonuses for community and Indigenous owned. In this way, the FiT “enables farmers, community groups and Native Canadians to participate directly in the development of their own renewable resources” (Gipe 2010).

As of November 2010, 384 MW of CRE projects had been approved for the FiT, representing 16 % of the state’s 2,500 MW of renewables approved under policy (Gipe 2010). Collectively, these projects will supply over 600,000 Ontario households. Further, the government claims the Green Energy Act will create over 50,000 jobs in its first three years (MEI 2011).

In Ontario, the FiT was coupled with policy to streamline the renewable energy development process, guarantee grid connection, guarantee project loans to low-income and Indigenous people, promote energy efficiency, build state renewables manufacturing and implementing a ‘smart grid’ to ensure maximum effectiveness and benefit from the FiT (MEI 2011).

### **UK**

The UK FiT is designed to support household, small business and community scale renewable energy projects. Different tariffs are available for electricity generation from solar PV, wind, hydro and anaerobic digestion projects up to 5MW (DECC n.d.). The FiT policy works in combination with the UK’s Renewable Energy Obligation for large-scale renewables, a certificate scheme similar to Australia’s Renewable Energy Target and the Regional and Urban Clean Energy Funds (that provides grants to community energy projects).

The FiT is currently under review to extend the eligible size from 5MW to 10MW for community projects (DECC 2014: 59).

### **Thailand**

Thailand launched an ambitious and successful feed-in tariff program in 2006. They have now installed nearly 1,000 MW of renewables with more than 4,000 MW in the pipeline; almost half of this solar PV (Gipe 2013). In 2013 they announced a special feed-in tariff 800MW of community-owned ground-mounted solar PV. Individual projects are expected to be 1 MW in size and financed through a combination of investment from locals and guaranteed loans from state banks (GIZ 2013). The program will be administered by the National Village and Urban Community Fund, a development and micro-credit organisation that operates through locally elected boards. Investment for each MW is expected to come from pooled resources from 60 villages, who will receive a return on their investment.

## **Non-financial policy support options**

### **Support and Coordination**

Support and mentoring from intermediary organisations has been key to the success of community energy in the UK (Seyfang 2014). Access to technical information and resources, including resource modeling and technical, financial and legal advice, has

been crucial. For example the UK is developing a “One-Stop Shop’ information resource for community energy groups . . . Government will provide seed-funding for start-up costs, with the aim of producing an independent and self-sustaining resource managed and led by the community energy sector” (DECC 2014: 40). On-the-ground mentors and support workers to facilitate information sharing, access to resources and advice and to provide guidance, as delivered by Renew Wales, Community Energy Scotland (independent not-for-profit organisations with government funding).

### ***Guaranteed Grid-Connection***

A challenge that many community renewable energy projects face is negotiating a grid connection agreement. Grid connection will be a significant cost for most community energy projects, but lack of clarity around the application process, connection costs and connection timelines can dramatically increase costs, and render them unpredictable. For example, connecting Hepburn Wind to the grid cost the cooperative almost twice as much as they were originally quoted. In addition, their production was limited to 50% of capacity for the first 18 months, while they waited for the necessary grid upgrades. All in all, this was a costly and un-foreseen outcomes that place significant financial stress on the project.

Despite having real outcomes on community energy project finances, this policy support option is included in the non-financial category, as it does not require the provision of funds by government.

One mechanism for overcoming this barrier is to legislate a grid connection guarantee, whereby grid operators are required to connect all projects at a reasonable distance from the grid at a reasonable cost and utilities are required to purchase all electricity supplied. Guaranteed grid connection is a typical feature of a good FiT policy, such as Germany’s EEG and Ontario’s Green Energy Act. Indeed the EEG additionally gives grid and generation priority to renewable energy sources. That is “when the grid is operating at full capacity, conventional power stations must reduce their electricity production” to favor renewable energy generation (BMU, 2007).

A grid connection guarantee reduces the institutional barrier of negotiating a grid connection agreement, however the large cost of grid connection remains. In some countries, such as Germany and Denmark, the cost of grid connection is shared by turbine owners (who pay to connect to the nearest technically suitable point of the grid) and utilities (who pay if the grid needs to be reinforced to take the extra load) (BMU, 2007; DWTOA 2009). In addition, these countries have introduced rules to streamline the inquiry and application process for parties seeking to connect into the grid and introduced standard connection timelines.

### ***Electricity Distribution Options***

#### ***Guaranteed Power Purchase Agreements with Retailers***

The precursor of the German Renewable Energy Act (2000) was the Electricity Feed in Act (1991) which, in addition to introducing a Feed-in Tariff, obliged network operators to purchase the electricity generated by small and medium projects, which were community wind farm projects in the early years. It also secured a minimum income for the electricity produced. (Stromeinspeisegesetz, 1990).

#### ***Virtual Net Metering***

Sweden and many states of the USA enable virtual net metering, which allows individuals to own shares in a renewable energy generation facility in one locality and to count this towards their consumption in another.

### ***Monitoring and Evaluation***

Monitoring and evaluation of community energy programs is critical for learning and improvement. It is important to factor in evaluation and monitoring means that will capture the multiple outcomes of community energy projects, beyond MW installed and dollars invested. As Seyfang et al (2014) comment:

“A huge priority is for government to recognise that many community energy projects are aiming to tackle fuel poverty and develop stronger communities, as well as generating or saving energy. Evaluation and performance monitoring really needs to value these different kinds of results, and not simply focus on the amounts of energy produced.”

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Gesetz über die Einspeisung von Strom aus erneuerbaren Energien in das öffentliche Netz (Stromeinspeisungsgesetz). German Electricity Feed in Act. 1990.

## Appendix A: UK Community Energy Strategy Summary

In 2014 the UK government introduced what is possibly the most comprehensive suite of policies to support community energy established by any country to date. This package has been introduced to support community participation and benefit in energy generation, demand reduction, management and purchasing. Policy mechanisms range from financial (grants, loans, feed-in tariffs) to non-financial (partnership-building, advisory services, working groups for critical issues, information sharing platforms, conferences and monitoring and evaluation mechanisms).

### Definition of Community Energy

For DECC, “Community energy is about many different types of community getting involved in energy issues in many different ways” (2014 p. 4). They see community energy as being able to “help achieve . . . goals of decarbonising the power sector and seeing a 15% share of our energy provided from renewable sources by 2020”. Independent modeling commissioned by the government suggest that community energy could generate up to 3GW of electricity, or 1.4% of national demand, by 2020.

The policy, and their definition of community energy, focuses on 4 activities of both heat and electricity:

- Generation
- Demand reduction
- Management
- Purchasing.

### UK Status on Community Energy

“At least 5,000 community energy groups have been active across the UK since 2008. Community energy is currently focused largely on renewable electricity generation, with the most prevalent technologies being solar PV and onshore wind. At least 60MW of community-owned renewable electricity generation capacity is currently in operation” (2014 p. 7).

### Policy motivations

Since 2009, the UK government has espoused a growing recognition that the “local and community levels will be needed for climate mitigation and to embed resilience in the energy system” (DECC, 2009). Underpinning the UK government introduction of a specific Community Energy policy in 2014 is a commitment to including and empowering citizens and communities to contribute significantly to the changes needed to reduce carbon emissions and act on climate change. The UK government also recognizes the broader benefits from community energy, namely building stronger communities, enhancing skills and education and delivering financial benefit, as well as the broader benefits that high levels of community support offers the renewable energy industry more generally (2014 p. 6). Through this policy, the UK government is also seeking to offer citizens a means to save on/ control electricity bills and hedge against price increases.

### Policy goals

“Our ambition is that every community that wants to form an energy group or take forward an energy project should be able to do so, regardless of background or location. We will back those who choose to pursue community energy, working to dismantle barriers and unlock the potential of the sector. We also want to reach out beyond those who are already active, encouraging more communities to get involved in all areas of community energy” (2014 p. 7).

### Policy Components

- A new **Community Energy unit in DECC**: to “work with communities and local authorities to provide a step-change in support for community energy projects” (2014 p.9). To provide knowledge sharing, advocacy and partnership building.



- **Communities and Local Government Conference**
- A **Community Benefits Register**: “for onshore wind in England will be established in spring 2014. This will make public the range of benefits from different projects – from new community buildings to cheaper electricity. This will help communities when negotiating benefit packages with developers for new projects. Scotland has had a register in place since 2012” (2014 p. 9).
- Fostering **partnerships** with Developers in order that “by 2015 it should be the norm for communities to be offered the opportunity of some level of ownership by commercial developers” (2014 p.9).
- A “**One Stop Shop’ information resource**: “for community energy, developed with community energy groups using seed funding from government”.
- A **peer mentoring scheme**: “£500,000 to enable experienced community energy groups in England to offer peer-to-peer support to newer entrants”.
- **Monitoring and evaluation**: reviewing government programs to evaluate effectiveness, to build the case for and to assess the trends in community energy, the government has committed to surveying the sector again in 2 years.
- A **Loan Fund**: “£15m Rural Community Energy Fund (RCEF)” and a “£10m Urban Community Energy Fund (UCEF)” to provide finance for communities “to explore the feasibility of, and planning for, electricity and heat projects” (2014 p. 12).
- **Feed-in Tariff**: reviewing the current FiT to possibly expand the maximum allowable size from 5MW to 10MW for community projects.
- **Access to commercial loans**: working with the Green Investment Bank to include small-scale onshore wind and hydro in their portfolio.
- **Removing barriers**: to crowd-funding and aggregation models of financial investment in CE. In addition, “new working groups bringing together regulators and industry will produce action plans during 2014 to tackle issues communities face on planning and permitting, electricity network connections, and hydropower” (2014 p.12).
- **District heating**: a £6.9m fund for local authorities to investigate district heating.

In addition, a number of significant energy efficiency incentives, including an investment of over £80 million in funding. There is also a “Collective Switching” program to enable bulk switching of energy providers and bulk purchasing of electricity in order to support citizens to control their energy prices.

### Policy Gaps

Two vital elements that are not explicitly addressed by the new UK policy are grid connection and securing a fair

