

## **IRENA Innovation Week 2018**

05 – 07 September 2018 | Bonn, Germany

**Empowering Citizens: Value, Challenges and implications,**

# ***Community owned renewable energy generation***



Why this yellow ribbon?



*Pep Puig, PhD engineer.*



# *Summary*

- ✧ A new vision of energy
- ✧ The key questions
  - ✧ Community power, why? how?
- ✧ Examples for learning
- ✧ Energ-ETHIC Democracy



# *What we want?*

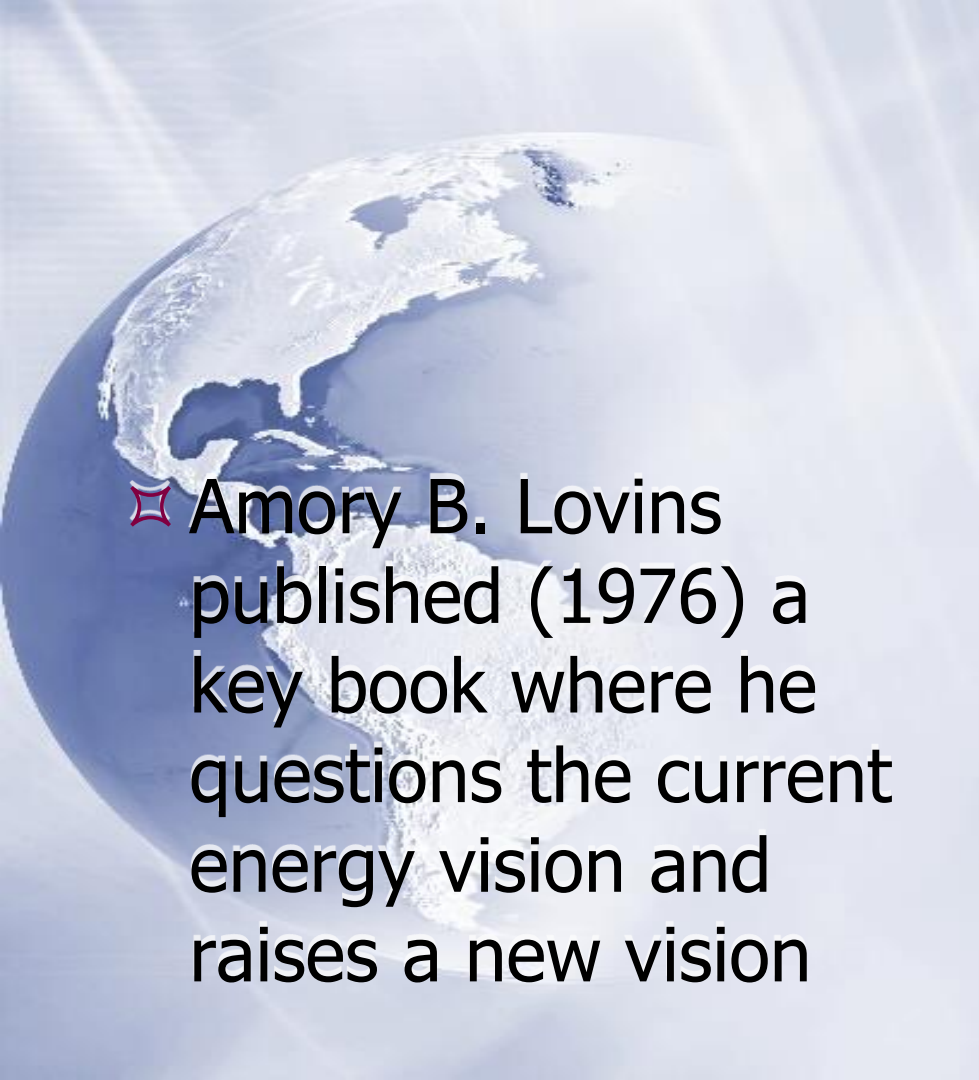
**A new vision of energy systems where:**

- ✧ **Energy as a common**
- ✧ **Person as producer/user** of energy:
  - ✧ PROD-USER (not pro-sumer!!!)
- ✧ **Democratic energy system:** people centered, based on persons and communities

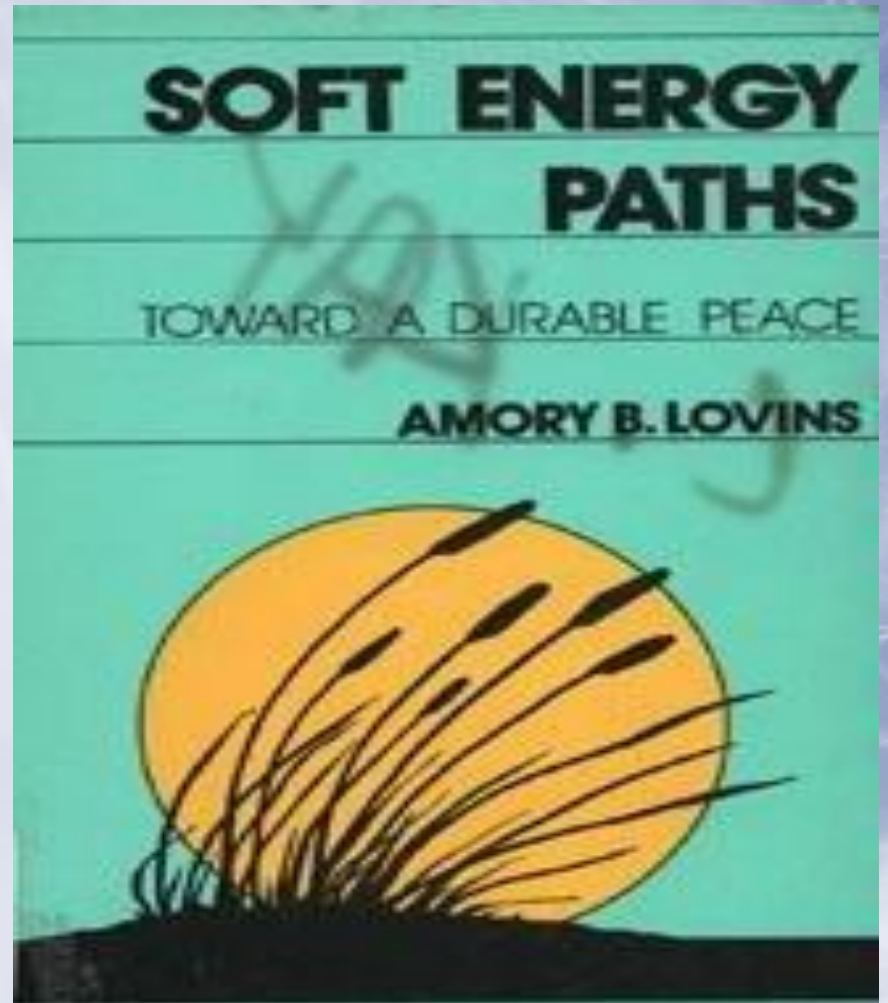


# *A new energy vision*

<b>Energy system</b>	<b>Dominant sXX</b>	<b>Possible sXXI</b>
<b>Energy</b>	Resource/merchandise	common
<b>Access to energy</b>	According to income	Guaranteed
<b>Person</b>	Consumer	Producer/user
<b>Technology</b>	Centralized	Distributed
<b>Decision</b>	A minority (technocracy)	Society (democracy)



✧ Amory B. Lovins published (1976) a key book where he questions the current energy vision and raises a new vision







# *The energy problem*

- ✧ Lovins rises **3 key questions:**
- ✧ **How much energy** we need to live with dignity?
- ✧ **Which kind of technology** is necessary to use?
- ✧ **Who has to control** the energy systems?



# *Who is in control?*

✧ The Lovins' answer to the 3<sup>rd</sup> question on control:

✧ It is necessary **to create decentralized energy systems:**

✧ Using **renewable energy**

✧ **Owned by the community** that manages and uses them

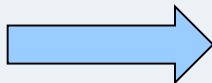
To make possible the **democratic control at local level**

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# Our Board of Directors



SMUD is owned by its customers, who elect a seven-member Board of Directors.



## Go solar

SMUD offers you the tools and information you need to make an informed choice about whether solar is right for your home or business.

If you're considering solar, use our [Solar System Estimator](#) to help you determine the benefits of installing a rooftop solar system. Let us serve as your trusted advisor to help you make the choice that's right for you.

[Give feedback](#)[Give feedback](#)



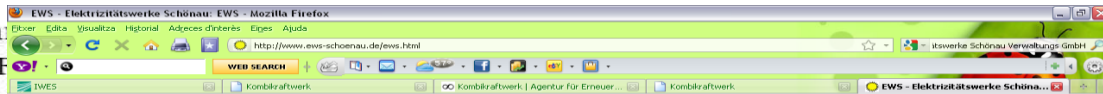
BUSINESS

# Germany's "Electricity Rebels"

Germany's  
Black Forest  
electric



The group  
power in  
energy &  
electricity  
that rew



**EWS**  
Elektrizitätswerke  
Schönau

atomstromlos. klimafreundlich. bürgereigen

Start > Kontakt > Impressum  
Sitemap > Datenschutzbüchse > AGB  
Suchbegriff eingeben

**Der etwas andere Energieversorger**

Die Elektrizitätswerke Schönau betreiben das Stromnetz in Schönau und versorgen bundesweit mehr als 100 000 Privathaushalte, Gewerbebetriebe und Industrie-Unternehmen mit sauberem Strom (Stand 12/2010). Die EWS sind aus einer Bürgerbewegung entstanden und strengen ökologischen Leitlinien verpflichtet. Die Geschäftsführung und Gesellschafter setzen nicht auf unbedingte Gewinnmaximierung, sondern investieren in eine nachhaltige Energieversorgung.

**MEHR INFOS**

- Jetzt wechseln! So leicht ist der Wechsel...
- Vertrag: Vertrag herunterladen, ausfüllen, mit Kopie der letzten Rechnung wegschicken - Fertig! (PDF)
- Anreise zur EWS: Anfahrtsplan nach Schönau und zu den EWS (PDF)
- Netzkauf EWS eG: Betriebsklärung und Satzung der Oerossenschaft
- Pressemitteilungen: Aktuelle Presseinformationen der EWS
- 100 gute Gründe.de
- Das Schönauer Gefühl: Der Film über die Geschichte der Stromrebellien produziert von FuSS e.V.
- Datenaustausch: Informationen zum elektronischen Datenaustausch mit der EWS Vertriebs GmbH

**100 GUTE GRÜNDE GEBEN ATOMSTROM KEINEN SINN**

Die Anti-Atom-Kampagne der EWS Schönau. Mitmachen!

**Das Schönauer Gefühl**  
Der Film über die Geschichte der Stromrebellien produziert von FuSS e.V.

**Datenaustausch**  
Informationen zum elektronischen Datenaustausch mit der EWS Vertriebs GmbH

**EWS in Zahlen**

Jahr	Werte
1998	~12
1999	~18
2000	30

**Elektrizitätswerke Schönau**  
Ein Bilderbuch  
Schönau ist eine kleine Stadt im Schwarzwald. Entdecken Sie unsere Heimat und die EWS.

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# 1st Community based wind project in Catalonia, in Spain and in the Southern Europe



Pujalt, Alta Anoia, Barcelona, May 6th., 2018: Living from the air

# *Why Community power in Spain?*

✧ All wind projects in Spain are owned by utilities or big commercial companies

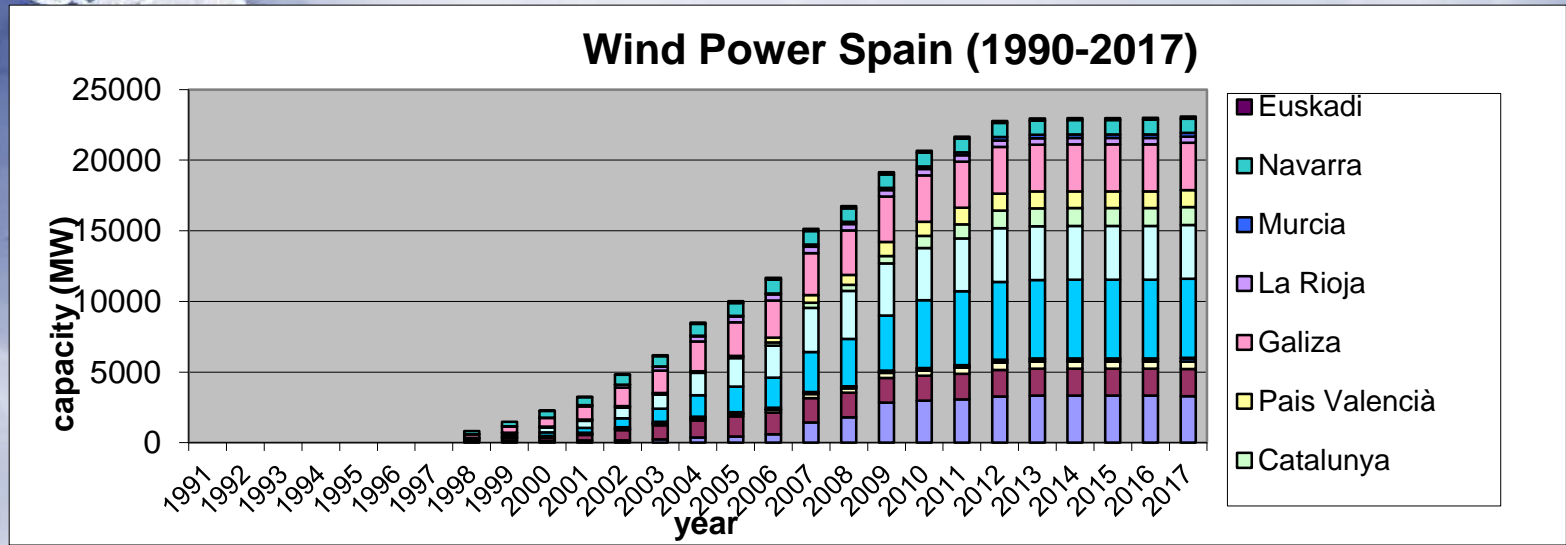


Iberdrola	24,15 %
Acciona Energía	18,48 %
EDP Renovables	9,88 %
ENEL Green Power España	6,48 %
Gas Natural Fenosa Renovables	5,26 %
Eolia Renovables	2,29 %
Saeta Yield	2,22 %
Vapat	2,04 %
RWE	1,92 %
Olivento	1,82 %
Enerfin	1,69 %
Viesgo	1,65 %
Bora Wind	1,43 %
Medwind	1,07 %
Others	19,62 %



# Why Community power in Spain?

- ✧ To show that in the Spanish context of RE (stagnant or retrograde) it's possible to develop a wind project based on a community approach (without FIT, bank loans, big utilities, big investors, etc., only based on people's power)



# *How it has been possible?*

- ✧ People involved in the project were founders of Ecotècnia Wind Coop in the eighties





# *How it has been possible?*

- Learning from solar community projects developed in Spain when FIT was existing



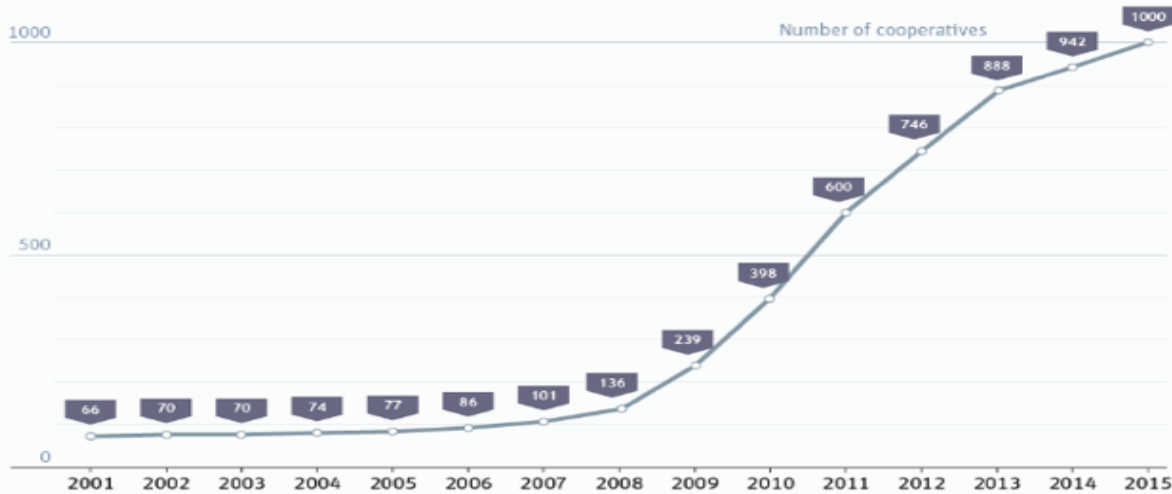
# How it has been possible?

## Germany leads on community energy projects

### Citizens form cooperatives to drive the energy transition

Number of energy cooperatives in Germany, 2001-2015

Source: [www.unendlich-viel-energie.de](http://www.unendlich-viel-energie.de)



German Energy Transition

[energytransition.de](http://energytransition.de)

CC BY SA





# German Energy Transition

Arguments for a renewable energy future.



KONGRESS

100%  
Erneuerbare  
Energie  
Regionen



*„Die Energiewende ist in der entscheidenden Phase. Ich glaube aber, es wird klappen.“*

Klaus Meiners (Aachen)

- Startseite
- Veranstalter
- Programm
- Ausstellung
- Sponsoren
- Anreise/Übernachtung
- Rückblick
- Projekte

[Termin in Outlook-Kalender eintragen!](#)

**Jetzt anmelden!**

## Kongress "100% Erneuerbare-Energie-Regionen" 11. + 12. November 2014

**Schwerpunktthema: Erfolgreiche Rahmenseetzungen für die dezentrale Energiewende in Kommunen und Regionen**

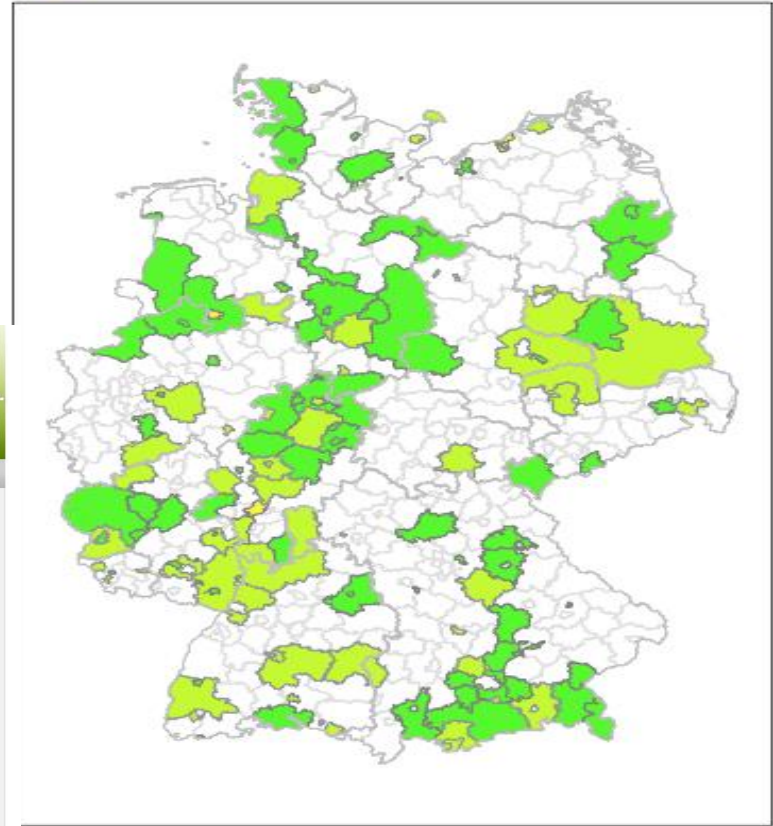
Die Energiewende ist eine der wichtigsten Zukunftsaufgaben Deutschlands. Sie wird bereits heute in einer großen Vielzahl von Kommunen, Landkreisen und Regionen praktisch gelebt. Hunderte von ambitionierten kommunalen Klimaschutzkonzepten wurden unter breiter Bürgerbeteiligung erstellt und zahlreiche regionale Energieinitiativen, wie zum Beispiel Bürgerenergiegenossenschaften, gegründet. Diese stehen bereit, ihre Projekte mit großem Engagement jetzt in die Tat umzusetzen.

Mit der thematischen Schwerpunktsetzung „Erfolgreiche Rahmenseetzungen für die dezentrale Energiewende in Kommunen und Regionen“ der Veranstaltung „100% Erneuerbare-Energie-Regionen“ in 2014 soll erreicht werden, diese regionalen Umsetzer und Treiber zusammenzuführen, um gemeinsam ein Bild über die aus ihrer Sicht notwendigen politischen Rahmenbedingungen zur erfolgreichen Weiterführung einer dezentralen, regionalen Energiewende zu entwerfen.

Wie auch bei allen Vorläuferveranstaltungen des Netzwerks im Rahmen der Kongressreihe "100% Erneuerbare-Energie-Regionen" steht auch diese Veranstaltung unter dem Motto: Aus der Praxis für die Praxis.

Die Kongressreihe "100% Erneuerbare-Energie-Regionen" ist einzigartig im Bereich der Kommunalkonferenzen. Mit mehr als 700 Teilnehmern – Vertretern aus Kommunen, Wirtschaft und Wissenschaft – ist die Veranstaltung der bundesweit größte Kongress dieser Art zum Thema "Erneuerbare Energien und Energieeffizienz in Regionen und Kommunen".

100%  
Erneuerbare  
Energie  
Regionen

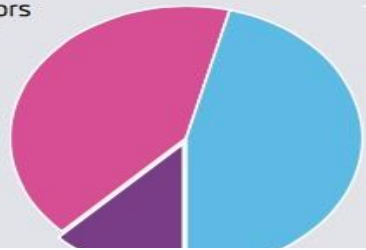


Regionen

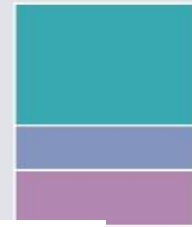
typen oder unzureichende Datenlage



Institutional and strategic investors  
30.2 GW (41.5%)



Citizen-owned renewable energy projects in broader sense  
33.5 GW (46.6%)



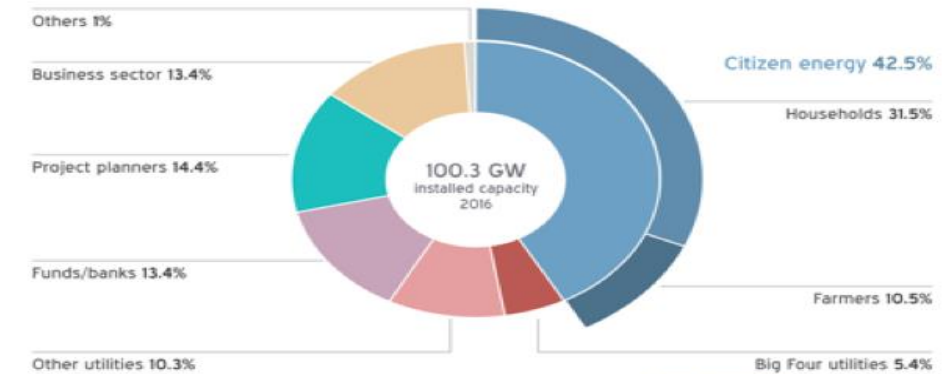
- Individual owners  
18.3 GW (25%)
- Citizen energy cooperatives  
6.7 GW (9.2%)
- Citizen participation (interregional, minority shareholders)  
8.4 GW (11.6%)

Citizen-owned renewable energy projects in a narrow sense  
25 GW (34.4%)

Investments in renewables are spread across many players

Ownership of renewable energy systems in Germany at the end of 2016

Source: trendresearch



ed storage power plants, offshore wind, geothermal energy, biowaste



# *How it has been possible?*



1974: Tvind schools asked themselves what to do in front of the oil crisis  
1975: beginning of the works  
1978: start of operation  
900 kW





**Nordisk Folkecenter**  
for Vedvarende Energi

# COMMUNITY WIND POWER for the World

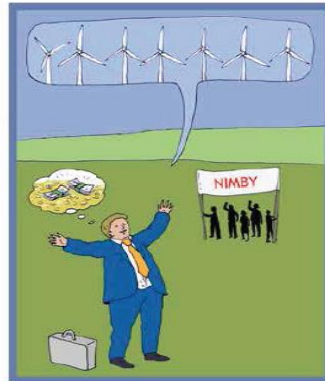
*Energy  
Local  
Community  
Lower Ele*

**Not 20% - but 100% local ownership as the alternative to external investors.**

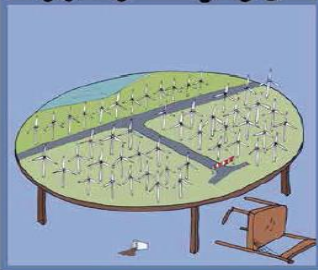
Citizens take matters in their own hands! Locally owned energy production will bring development and generate income for the local community.



**OPTION 1.**



People abandon their land and move away. Money flows to investor's pocket.



**OPTION 2.**

# Middelgrundens Vindmøllelaug



View in Danish

Offshore Wind Farm outside the Harbour of Copenhagen



Right now  
follow the wind farm's  
power production  
online



Links

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## The Wind Farm

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**Real World Example:  
Hvide Sande, fishery harbour Denmark:  
100% local acceptance**



# *Why Community energy?*

- ✧ It creates **local dialogue** and **acceptance**
- ✧ It raises **public awareness**
- ✧ It **solves problems and conflicts**
- ✧ It demands **less transmission lines** and saves electricity
- ✧ It is private investment promoting **cheaper and better technologies**
- ✧ It is **DEMOCRATIC**
- ✧ It makes **sustainable development** understandable
- ✧ It gives people **opportunity to act for** sustainable development
  - ✧ Generating clean energy & reducing CO2 emissions





HOME ABOUT US COMMUNITY OWNERSHIP



HOME ABOUT US COMMUNITY OWNERSHIP



HOME ABOUT US COMMUNITY OWNERSHIP GET INVOLVED NEW PROJECTS GREEN ENERGY NEWS CONTACT US [Rescoop](#) [Members](#)

### ENERGY4ALL LIMITED DELIVERING COMMUNITY GREEN POWER

Energy4All was formed in 2002 to expand community ownership of renewable energy. We now have 15 projects in the Energy4All family with 10,000+ members - £30m+ raised - enabling many more communities to benefit from renewable energy.

[REGISTER YOUR INTEREST >](#)

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ÉNERGIE PARTAGÉE

NOUS CONNAÎTRE L'ÉNERGIE CITOYENNE BOÎTE À OUTILS DEVENIR ACTIONNAIRE



## L'énergie par les citoyens, pour les citoyens

[CARTE DES PROJETS](#)



# COMMUNITY WIND

# SUPPORTED POWER

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Getting Started Latest Headlines

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Latest News  
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### BUSINESS

## Big Power Goes Local

A grass-roots movement to generate power in towns and basements is challenging the energy industry's status quo.



the construction of new wind energy projects, and after a partnership between government and industry, Denmark as the world leader in the wind industry: most Americans don't know is that the vast majority of installations in Denmark were composed of small groups of 10-15 small turbines, not the huge wind farms of today. Danish wind turbines were operated by farmers, local small businesses, either independently, or more frequently cooperative ventures. These were their key components in the wind initiative:

1. The right of wind power developers to connect to the electrical grid.
2. The legal requirement that utilities purchase the wind-generated electricity, and
3. A guaranteed fair price.

These requirements removed one of the biggest hurdles to developing the wind







# England



## SHARE OFFER NOW OPEN



**The Schools' Energy**  
The Schools' Energy  
£500,000 under this  
a children's hospice.

[Click here to download the Share Offer Document](#)

Coming Soon



## Academy for a better world, Brahma Kumaris, Mt Abu, India



# Ontario



# *Community energy*

## ✧ **Community energy requires:**

✧ **Balanced playing field** (fair regulation)

✧ **Equal access to capital** and financing,

✧ **Self-organization** and good community management

✧ **Education and empowerment** to people in the community so they recognise their opportunities to become active in the energy system (interaction between people and between them and the networks)

# *Community energy*

- ✧ Opens the door to build a **democratic energ-ETHIC system**
- ✧ **Empowering** individuals and communities
  - ✧ **social appropriation of technologies**
- ✧ **Using renewable** energy sources
- ✧ **Taking advantage** of their capture, conversion and use
  - ✧ Sharing locally the wealth generated
  - ✧ Combining, at local level, technological opportunities with economic opportunities



# *Community energy*

✧ **Principles** in which a **democratic energ-ETHIC system** should be based:

1. Reducing energy needs (efficiency)
2. Free of fire (no fossil fuels)
3. Flexibility (two way flow)
4. Local control (local decision making)
5. Equitable access (technologies, networks)



# *Community energy*

✧ **Energy democracy has the ability to create a fair and equitable energy economy**

✧ where **energy prices** are **transparent** and **effective in terms of cost,**

✧ where there is **no cross-subsidization** from one part of the system to another part thereof



# *Community energy*

✧ **Every community has the opportunity to be the owner of a renewable energy project**

✧ **Communities of locality**

✧ are made up of people living in a certain geographical area, be it a small village, a county, or a densely populated city

✧ **Communities of interest**

✧ are comprised of individuals living in many different communities of locality that nevertheless share a common interest



# POWER TO THE PEOPLE

Do big multinationals really own energy? Can communities take control over what should belong to them?

**FREE CATALAN  
POLITICAL  
PRISONERS!**

 Crida per la  
Democràcia

 ÒMNIUM  
L'ORGANITZACIÓ PER LA Llibertat

