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Innovative financing and business models for RES

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UNDP Croatia

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- Why innovative financing and business models to finance RES?
- Energy cooperatives
- Green energy suppliers
- RES + ESCO
- Crowdfunding for RES
- Net metering / net billing

Barriers to RES

*administrative
barriers*

*technical and
technological
barriers*

*market
barriers*

*financial
barriers*

Paradigm shift



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Democratization of energy sector

Large power utilities not fully recognized RES –
old school thinking prevails

10 largest EU power utilities had only 4%* of
generation from RES in 2014 (without large
hydro)

Citizens very interested to invest




THE PROBLEM:



Picture credits:
http://www.b4bschwaben.de/cms_media/module_img/202/101129_1_lightbox_Atomkraftwerk_fotolia.jpg,
<http://www.aukeva.com/blog/wp-content/uploads/2012/06/Real-estate-investment-opportunities-300x238.png>





**Energy
cooperatives**



Germany

Renewables in the hands of the people

Ownership of renewables installed capacity in Germany, 2010

Source: www.unendlich-ziel-energie.de

The *Big Four* energy suppliers
6.5%

Other energy suppliers
7%

Industry
9%

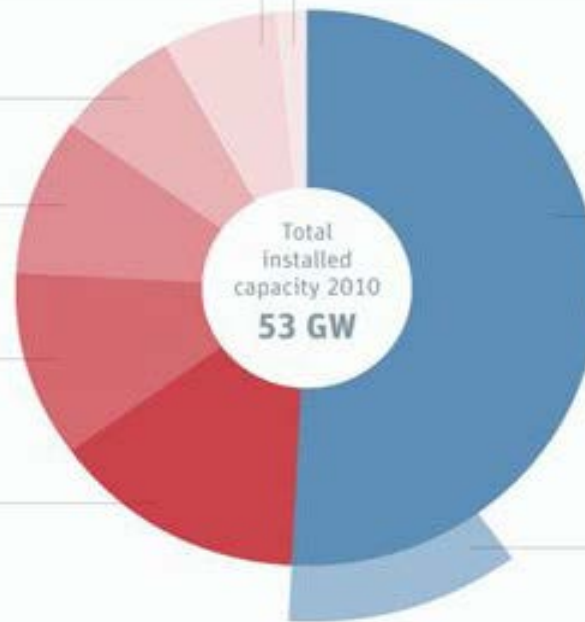
Investment funds and banks
11%

Project firms
14%

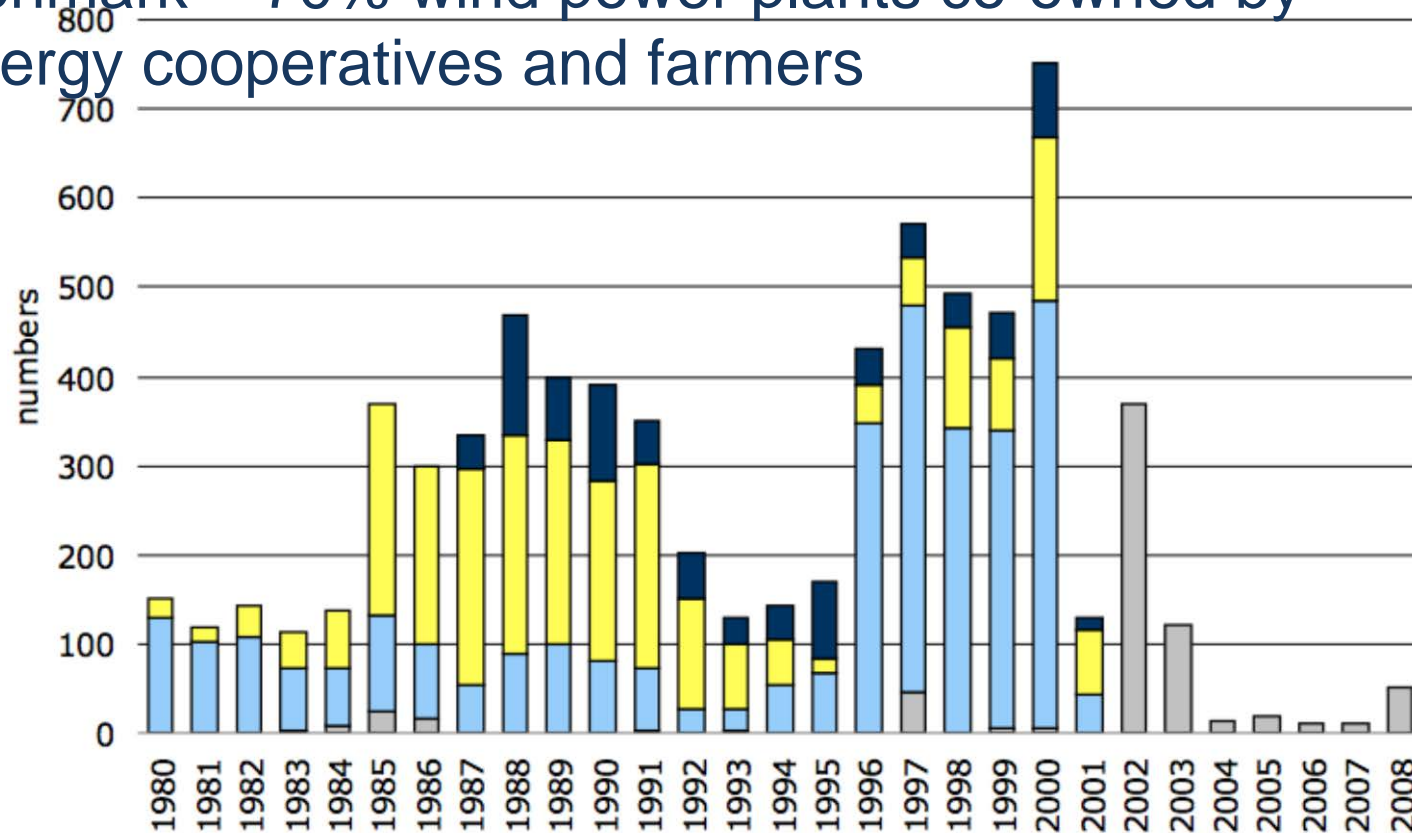
Other
1.5%

Private individuals
51%

Farmers
11%



Denmark - 70% wind power plants co-owned by energy cooperatives and farmers



Drugo/nepoznato

Vlasništvo jedne osobe

Skupno vlasništvo

Energetske kompanije

GÜSSING / SCHONAU



Energy cooperatives project



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- Organized 20 seminars across Croatia, developed web site, Manual on setting up energy coops;
- International conference „100% renewable energy on islands” in cooperation with REScoop project;
- As a result in 2013, ten energy coops started in Croatia
- All energy coops are in early stage, and new financing and new business models needed;
- Focus of cooperatives: biomass, PV, electro mobility, biogas, wind, energy efficiency in buildings...

Energetske zadruga

Zajedničko ulaganje u održivu budućnost

POČETNA

ZADRUGE

NOVOSTI

POLITIKA



Što su energetske zadruga?

Energetske zadruga su udruženja lokalnih aktera (pojedinaца, kompanija, javnih ustanova, lokalnih samouprava itd.) koji zajedno razvijaju projekte obnovljivih izvora energije. Zajedničkim ulaganjem smanjuje se rizik investicije i dijeli se dobit od projekta.

Energetske zadruga promiču demokratski način odlučivanja o energetskim pitanjima. Cilj takvih zadruga je promovirati obnovljive izvore energije u vlasništvu lokalnih zajednica.



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ULAGANJE U ODRŽIVI RAZVOJ

Obnovljivi izvori energije kao



ENERGETSKE ZADRUGE



Energetske zadruga

★★★★☆ (7 ratings)

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www.energetskazadruga.hr

Energy/Utility
Službeni projekt "Osnivanje energetske zadruga"



818



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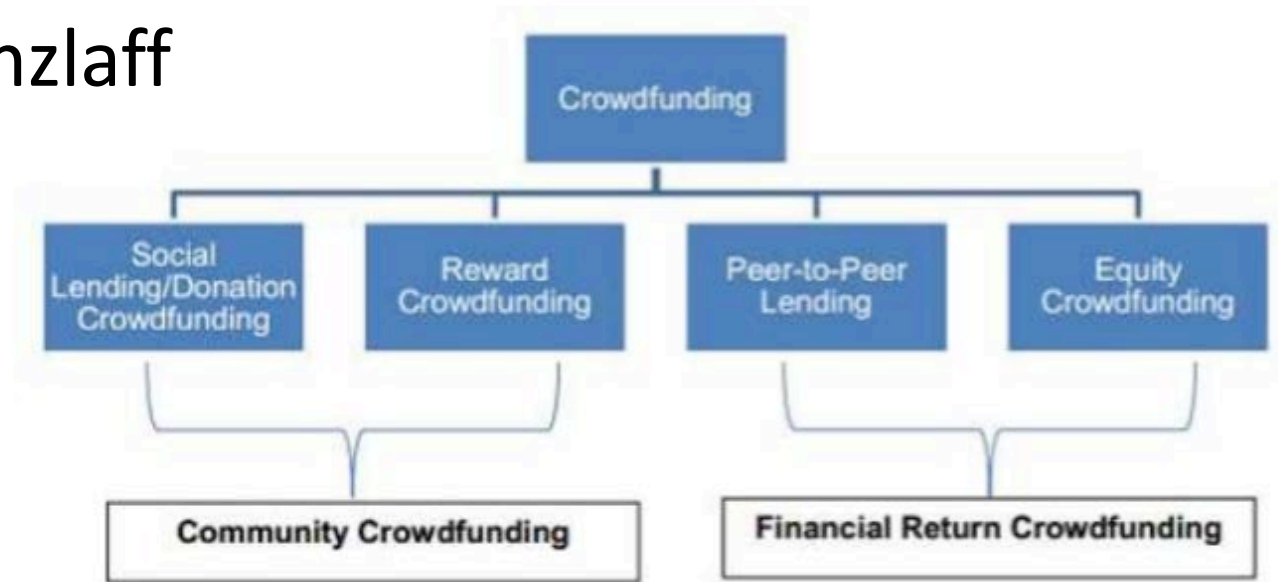
CROWDFUNDING



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Crowdfunding is a public call via the Web 2.0 with the aim to mobilize financial resources for a certain project with and without returns. – Karsten Wenzlaff





- In 2014 - **16.2 billion USD collected worldwide**; 167% rise from previous year (in 2013 - **6.1 billion USD**)
- In 2015 – **35 billion USD (estimation)**
- Expected to grow to **100 billion USD** in 2025 (World Bank)



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**€1.3 million in 13 hours by
selling 6.648 shares to 1700
Dutch households**

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Get ready to get funded



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Kaštel Lukšić



\$10,001 USD
raised by **189 people** in 1 month

100% funded 0 time left

\$10,000 USD goal
Flexible Funding

CAMPAIGN CLOSED
This campaign ended on January 30, 2014

Indiegogo: 10.000 USD; total collected: 115.000 USD

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RENEWABLE ENERGY CROWDFUNDING MAP

RENEWABLE ENERGY CROWDFUNDING CONFERENCE
 5 NOVEMBER 2015 /// LONDON, UK
www.recrowdfunding.eu

NOTABLE PROJECTS OPEN FOR FUNDING


#1
 Platform: Abundance Generation
 Project: Ecosol PV
 Raising target: £1.900.000
 Type project: Solar PV



#2
 Platform: Trillion Fund
 Project: Whalley Hydro
 Raising target: £750.000
 Type project: Hydro



#3
 Platform: Abundance Generation
 Project: Oakapple Two - Debenture 2
 Raising target: £388.000
 Type project: Solar PV



USA

Divvy
 Since 2014
 4 Projects
 €11,500 Raised

Clean Reach
 Since 2014
 6 Projects
 €5,980 Raised

CollectiveSun
 Since 2015
 5 Projects
 €326,781 Raised

RE-VOLV
 Since 2011
 3 Projects
 €111,746 Raised

SunFunder
 Since 2011
 21 Projects
 €437,500 Raised

MOSAIC Since 2013

UK

abundance
 Since 2009
 14 Projects
 €15,857,783 Raised

Trillion Fund
 Since 2011
 23 Projects
 €104,379,968 Raised

microgenius
 Since 2011
 18 Projects
 €2.130.000 Raised

SOLAR SCHOOLS
 Since 2013
 65 Projects
 €736,164 Raised

NETHERLANDS

de Windcentrale
 Since 2010
 9 Projects
 €15,000,000 Raised

DUURZAAM INVESTEREN.NL
 Since 2014
 7 Projects
 €2,900,000 Raised

GREENCROWD
 Since 2012
 24 Projects
 €1,833,600 Raised

WE SHARE SOLAR
 Since 2012
 €1,700,000 Raised

FRANCE

Lendosphere.com
 Since 2014
 12 Projects
 €970,000 Raised

lumo
 Since 2012
 6 Projects
 €200,000 Raised

enerfip
 Since 2015
 2 Projects
 €7,900 Raised

GERMANY

econeers
 Since 2013
 10 Projects
 €4,100,000 Raised

bettervest
 Since 2013
 28 Projects
 €1,700,000 Raised

GreenVesting
 Since 2009
 9 Projects
 €980,000 Raised

greenX money
 Since 2014
 14 Projects
 €311,000 Raised


LehDeinerUmweltGeld
 Since 2013
 19 Projects
 €4,000,000 Raised

PORTUGAL

Coopernico
 Since 2013
 7 Projects
 €327,000 Raised

QUICK FACTS

There's more than **1250 active Crowdfunding Platforms (CFPs)** worldwide



2015 Crowdfunding Volumes:

- North America: \$9.46 billion
- Asia: \$3.4 billion
- Europe: \$3.26 billion




There are **25 crowdfunding platforms** solely focused on **renewable energy**



Renewable Energy Crowdfunding raised over **€165mln**, funding more than **300 projects**



Crowdfunding may supply rooftop solar projects with **\$5 billion of investments** within five years, more than **50 times** the amount raised to date.





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Abundance



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£14,834,703
invested in projects



16
projects funded



£1,241,437
returned to investors

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Trillion fund



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Mixed energy United Kingdom

Good Energy Bond

by Good Energy Group PLC

Support this pioneering UK energy company, generating purely from renewable energy and gain a 7.25 per cent per annum target return.

Min. Investment	£500
Type	Bond
Return	7.25% (Interest)

£15MIL



0 HOURS LEFT



Wind India

The Converging World

by The Converging World

5.0% loan to The Converging World, a UK charity which invests in renewable energy in India.

Min. Investment	£50
Type	Loan
Return	5.00% (Annual Interest Rate)

TIPPING POINT £200,000



0 HOURS LEFT 43 LENDERS



Solar Plymouth, UK

Plymouth Energy Community

by PEC Renewables

Receive a target 6 per cent annual return on an investment in solar PV that will help the local community cut energy bills.

Min. Investment	£50
Type	Community Share
Return	6.00% (Projected Internal Rate of Return)

£600,000



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TRINE



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Jinja, Uganda

Solar fishing lights for fishers in Uganda

Bring solar fishing lamps and solar lanterns to fishing villages around Lake Victoria

Investment Progress



\$24 200 of \$25 000

[View Project](#)



Kitale, Kenya

Solar home systems for families in Kenya

Support local households and families in Kitale with access to electricity through solar home systems

Reserved Amount



\$50 000 of \$50 000

[View Project](#)



Sidonge, Kenya

Solar energy to support Kenyan community

Provide 50 households with electricity, light and other services

Fully Funded



€30 000 of €30 000

[View Project](#)

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KIVA



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Pedro

 Nicaragua | Personal Use | Home Energy

A loan of \$350 helps Pedro to buy a 100 watt, 3 panel solar energy system.

[Read their story »](#)
Funding via TECNOSOL

85% funded




\$50 to go

Lend \$25



Rat

 Cambodia | Personal Use | Home Energy

A loan of \$700 helps Rat to buy a solar panel for her family to use.

[Read their story »](#)
Funding via VisionFund Cambodia

42% funded



\$400 to go

Lend \$25



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Bettervest



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Mobile Solarkraftwerke Afrika GmbH & Co. KG - Mourdiah (Mali)

Solar erreicht in 4 Tagen

erreicht

- 9% Rendite
- 41.16t CO₂ Einsparung
- 7 Jahre Laufzeit
- 10% effizienter
- 107,700€ benötigt

107,700€ von 174 Investoren

bitte einloggen

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Verstanden

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TOP 5 BY AMOUNT



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Top 5 Crowdfunding Platforms ranked by amount raised

Platform	Country	Amount raised(€)	Projects*
TrillionFund	UK	€104,379,968	23
Abundance	UK	€15,857,783	14
Windcentrale	NL	€15,000,000	9
Village Power	US	€4,600,000	10
Econeers	DE	€4,100,000	10

TOP 5 BY NUMBER OF PROJECTS

Top 5 Crowdfunding Platforms ranked by number of projects*

Platform	Country	Amount raised	Projects*
Solar Schools	UK	€ 736,164	65
Bettervest	DE	€1,700,000	28
GreenCrowd	NL	€1,833,600	24
TrillionFund	UK	€104,379,968	23
SunFunder	US	€402,500	21

ESCO for RES and EE combined



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ESCO for PV/LED project: led by Green Energy Cooperative

- investment: **70.000 USD**
- LED: **474 lamps**; consumption: 19.6kWh instead of 65.9kWh
- PV: **22kW**
- Return of investment: 6.6 years
- Apart from own resources (crowdfunding) ESCO investment by a private company



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Green energy suppliers



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- Different business models are possible
- Buying and supplying RE at the same time – also through REScoops
- Opportunity for net-billing system
- Planning grid connection



Discussion

- What are the barriers for citizens to invest in RES?
- How to speed this process up?
- Using only one finance model, or a combination of more?



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THANK YOU!

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