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Aripaev conference

Crowd Funding/ Energy Coop's

KPMG Baltics SIA
Energy and Utilities Advisory services

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Wood chip / peat briquette, un-industrial forest products, wood chip, silage are all replacement fuels used in small municipal coop projects in Finland:

They are replacing oil (price ~1EUR/ litre = 130 EUR/MWh, while heavy boiler oil is ~100 EUR/MWh).

The total price of heat supply to end consumer is ~50-90 EUR/MWh (Ex. VAT), depending on technology, fuel, location and operational model.

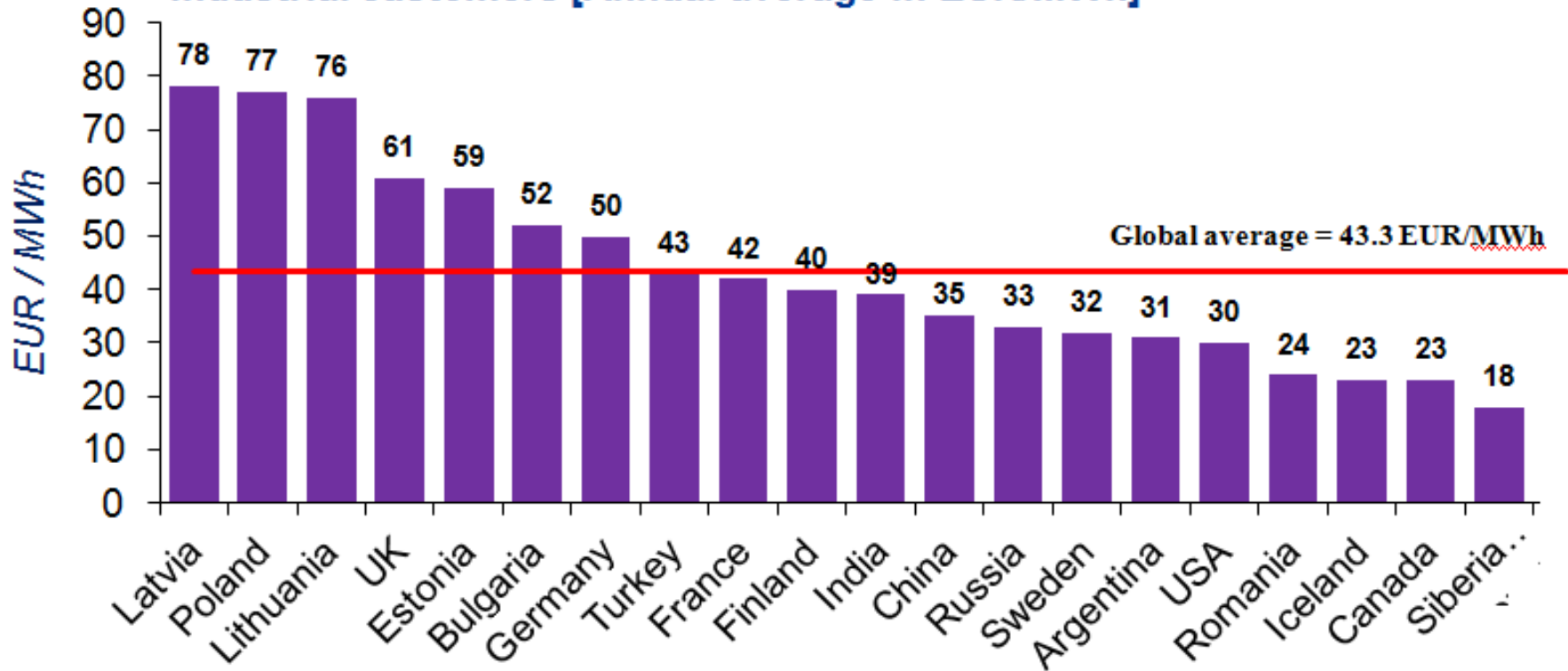
The Kontio Energy cooperative, at the Kontiolahti municipality is reporting that some of its heating coops are producing heat at a unit cost of 26 EUR/MWh, coupled with investment amortization requirement, the final cost to the consumer is ~50 EUR/MWh

Their plant is producing ~1000 MWh/year using un-industrial forest products. The population of the municipality is ~14 000 and population density 17,26 inhabitants per km².

When normalizing and accounting for economies of scale, grid density, fuel price escalation, labor and construction cost differences , buying power ; it may well be that these municipalities enjoy cheaper heat prices than currently available in Tallinn (~55 EUR/ MWh).

In Helsinki, end consumer District Heating price was **~62 EUR/MWh** (Ex. V.A.T) at the beginning of 2013.

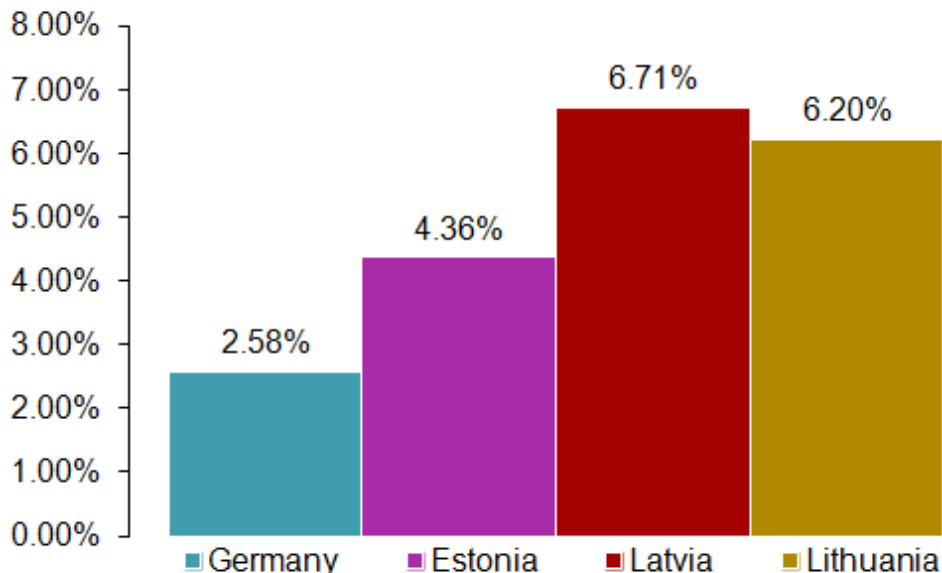
International comparison of electricity prices for very large industrial customers [Annual average in EUR/MWh]



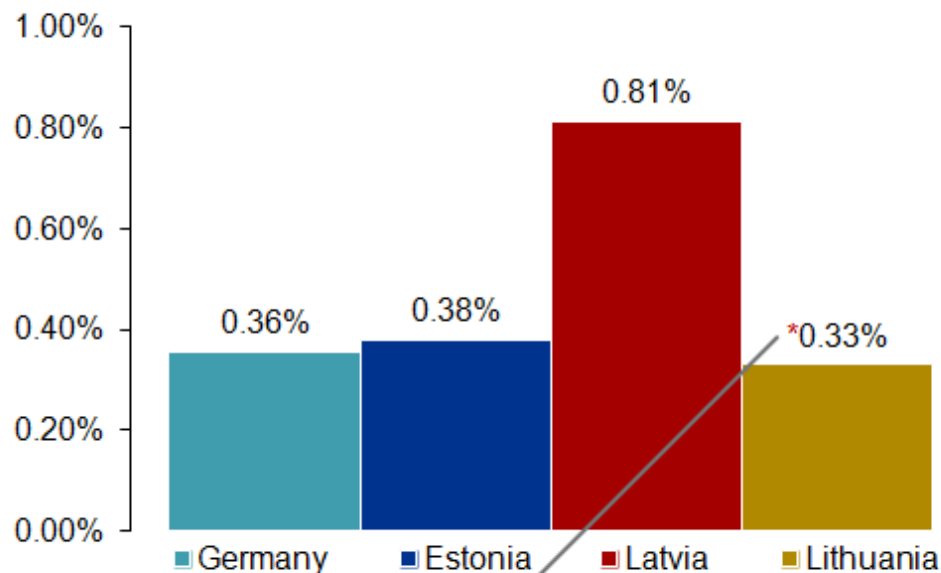
Source: KPMG Survey, April - May 2012 (Courtesy of the Latvian Construction Materials Association, BRA).
 Direct electricity contract prices paid by some large electricity consumers (100-1000GWh/year),
 Excluding V.A.T, including all surcharges.

Why Energy Coop's – Impact of Electricity surcharges

Monthly electricity payment as % of net average salary



RES + CHP electricity tariff surcharge % of net average salary



* The Lithuanian Public Service Obligation charge, which is equivalent to the Latvian OIK is charged for support granted to RES, SoS, efficient CHP, NPP, Interconnections (Strategic projects) and a number of other minor items. The Lithuanian value shown in this chart is for the specific RES + CHP PSO related charge for 2012; **In case total Lithuanian PSO charge is considered – the burden is 0.63%.**

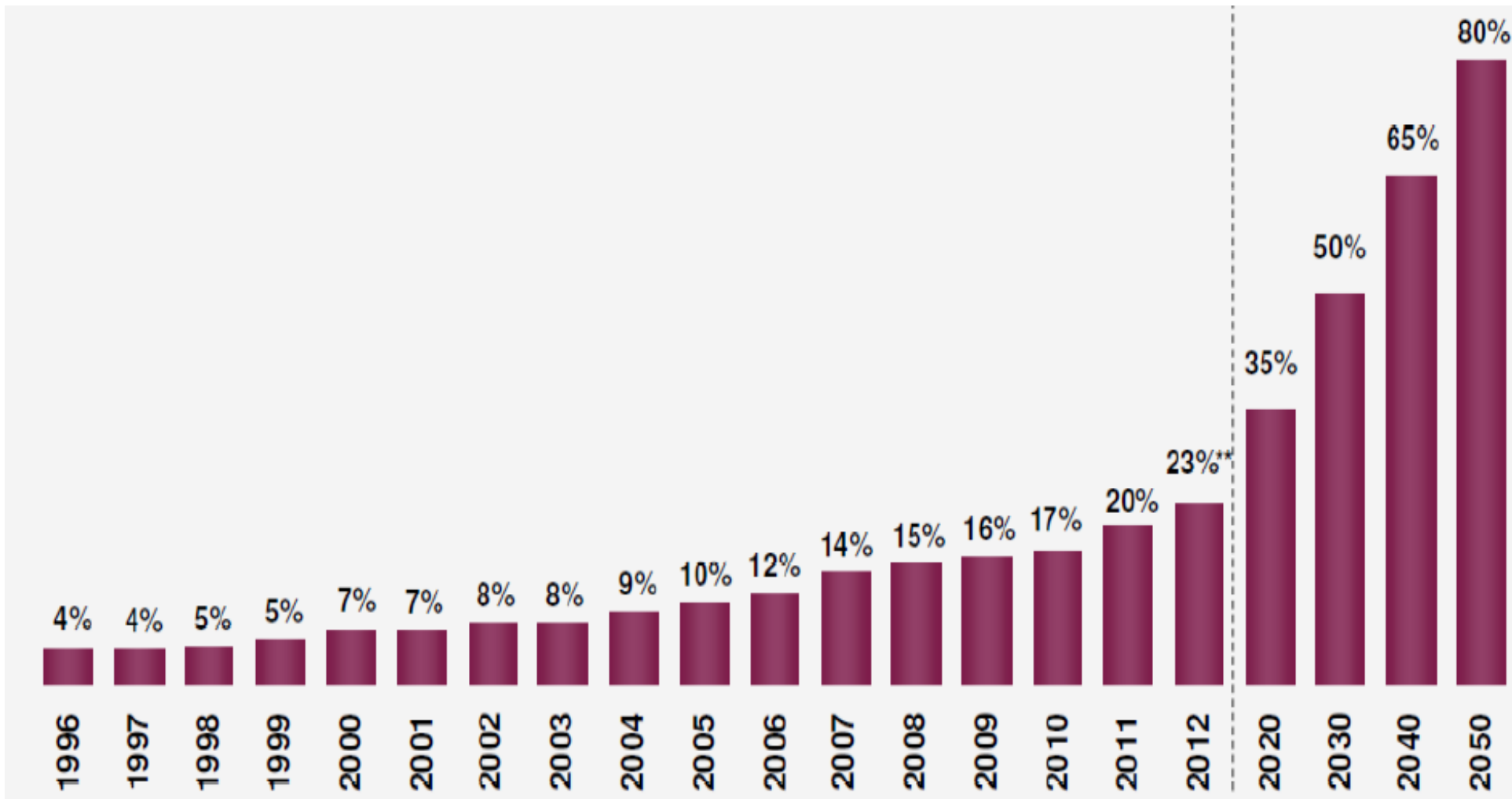
Source: Eurostat, National PUC's, National Electric Co.

Assumed 2500kWh/year consumption.

Electricity tariffs and 2012 annual average, per 2500-5000 kWh/year consumer group, including all taxes and surcharges.

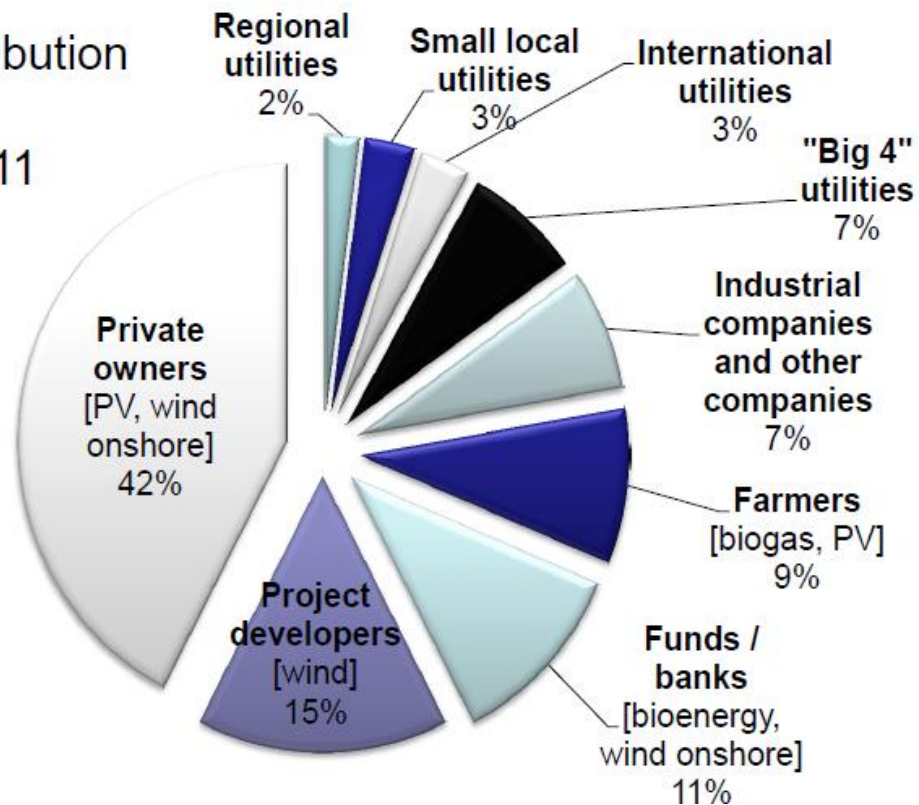
Net average salaries for 2012 from Eurostat are: 2108 EUR/month Germany, 430 EUR/Month Lithuania, 450 EUR/Month Latvia and 530 EUR/month Estonia.

Germany – Share of Renewable electricity in total generation



Who owns Renewable projects in Germany?

Ownership distribution of renewable installations, 2011



Renewable power generation is ~51% owned by private individuals and Coop's

Why? – because it saves people money:

FIT is provided directly to the projects, thereby allowing to reduce heat and power prices to end consumers

Using a number of return mechanisms:

Equity based - Yield on dividends.

Debt based – Yield on annuity.

Royalty payments - % from revenue.

Funding platform statistics – Energy Coop’s are on it!

Country	# of CFI Platforms	Country	# of CFI Platforms
United States	344	Brazil	17
France	53	Canada	34
Italy	15	Australia	12
United Kingdom	87	South Africa	4
Spain	27	India	10
Netherlands	34	Russian Federation	4
Germany	26	Belgium	1
		Hong Kong SAR, China	1
		China	1
		United Arab Emirates	1
		Estonia	1

A new direct investment model – individuals invest directly through an online clearing house or aggregator, in return for an equity stake, structured payments, products or a combination thereof.

The idea is being applied to clean energy: In 2012, **Solar Mosaic**, raised \$1.1 million from 400 crowd-funders:

Available projects are listed on its website, and investors provide the capital that is used to buy and install rooftop solar panels, When the systems are complete and selling power, typically to building owners or occupants, the backers are repaid with interest.

This seed money allowed raising \$2.5 million in venture capital and receiving \$2 million grant from the US Department of Energy.

In Germany, the **Crowd Energy** Internet portal handled its first project in August 2012 – a 93kW solar array, which received EUR 19,000 (10% of the total cost), allowing to raise the additional debt and equity capital needed to fund the project.

This financing mechanism is not problem-free:

It **does not offset project credit risk**. (backers are motivated by the environmental and social values behind a project).

If crowd funding is to expand substantially, *credit risk* and *insurance products* will be needed to protect investors

Risks are not “mutualized” - single investor is taking a lot of risk by investing into a specific project, instead of diversifying among geographies, technologies, sizes, performance of RES investments.

How would the **regulatory risk** be addressed? – Especially in the Baltics, RES-E regulation keeps changing, significantly impacting project financial performance. (A RES startup would raise Crowd funds prior to commissioning...increasing the risk of default).

Grid connection – DSO grid congestion, insufficient capacity, DSO tariff structure, high connection costs. May delay project start-up indefinitely, significantly risking investors capital.

Overview of projects and dollars at crowdfunding platform Kickstarter up to February 2013

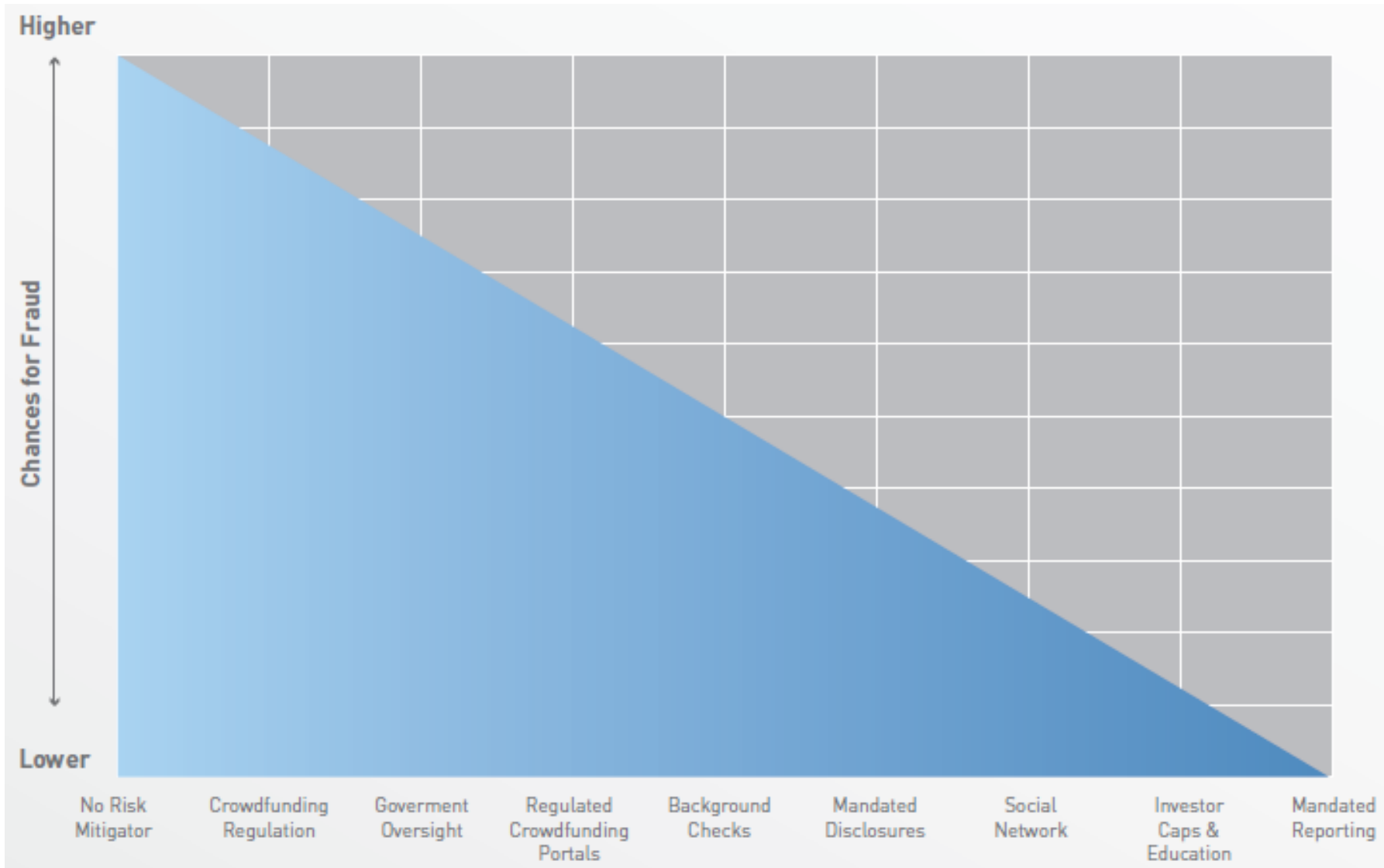
Projects and dollars	Projects, million U.S. dollars, success rate in percent
Launched projects	85,467
Total dollars (million U.S. dollars)	476
Successful dollars (million U.S. dollars)	409
Unsuccessful dollars (million U.S. dollars)	53
Live dollars (million U.S. dollars)	14
Live projects	3,465
Success rate (%)	43.57

Source: Statista

More than 50% of investment projects fail

A formal framework is needed to increase project feasibility, reduce speculation, increase investor's comfort and guarantees.

Risk mitigation approaches



Risks associated with limited due diligence

Donations or investments may be misused if funds are not used for the purposes of the project;

Investors may not be sufficiently knowledgeable about business plans and commercial limitations to make informed decisions;

There is a higher risk of loss of investment if the projects and the entrepreneurs are not vetted.

Since the vetting process is currently the responsibility of the investor, crowd funding websites are indemnified against financial losses made by the investors; and

Investors may lose trust in platforms such as Kickstarter, if they allow fraudsters to use their website for raising funds on a regular basis.

Upsides of not having a formal due diligence process

Reliance is placed on the public through social networks, instead of a formal vetting process which would add to the red tape surrounding start-ups;

High risks associated with such investments are spread amongst numerous individuals and entities, leaving each of them exposed to only the limit of their donated amount. Such donations may not be worthy of incurring further due diligence costs;

Easy access to information in the public domain deters fraudsters from raising capital through this medium. The ability to share information on the experiences of crowd sourcing websites and progress of projects makes these projects less susceptible to fraud; and

Barriers to entry are lowered as, unlike obtaining loans from banks, a minimum credit score is not required to start-up a project and request funding

Aside from Crowd funding platform risks, Energy coop risks need to be addressed as well !!

How does an Energy Coop project development work?

A core group establishes the feasibility of a project, often with the support of a special state funded technical support facility.



It publishes a prospectus, explaining the business plan, intended return on investment and plans for community benefit and the scheme is marketed



For larger schemes, funding from individual investors is supplemented by a bank loan, or co-operation with a commercial developer



When the funds are raised, the scheme is constructed.



Fundamental issues pertaining to the success of an Energy Coop project:

1. **Management skills of the core group.** (Technical, economic, administrative, regulation, sector)
2. **Quality of feasibility and business planning.** (Accounting, legal, Tax, modeling, engineering).
3. **Requirement from prospectus** (Identity and credit worthiness of project vendor).
4. Availability of a **standardized Energy Coop application process.**
 (“**One stop shop**” handles – Grid connection coordination, funding guarantees, permitting)
5. Construction project management (Control and track Financial, time and project quality performance).

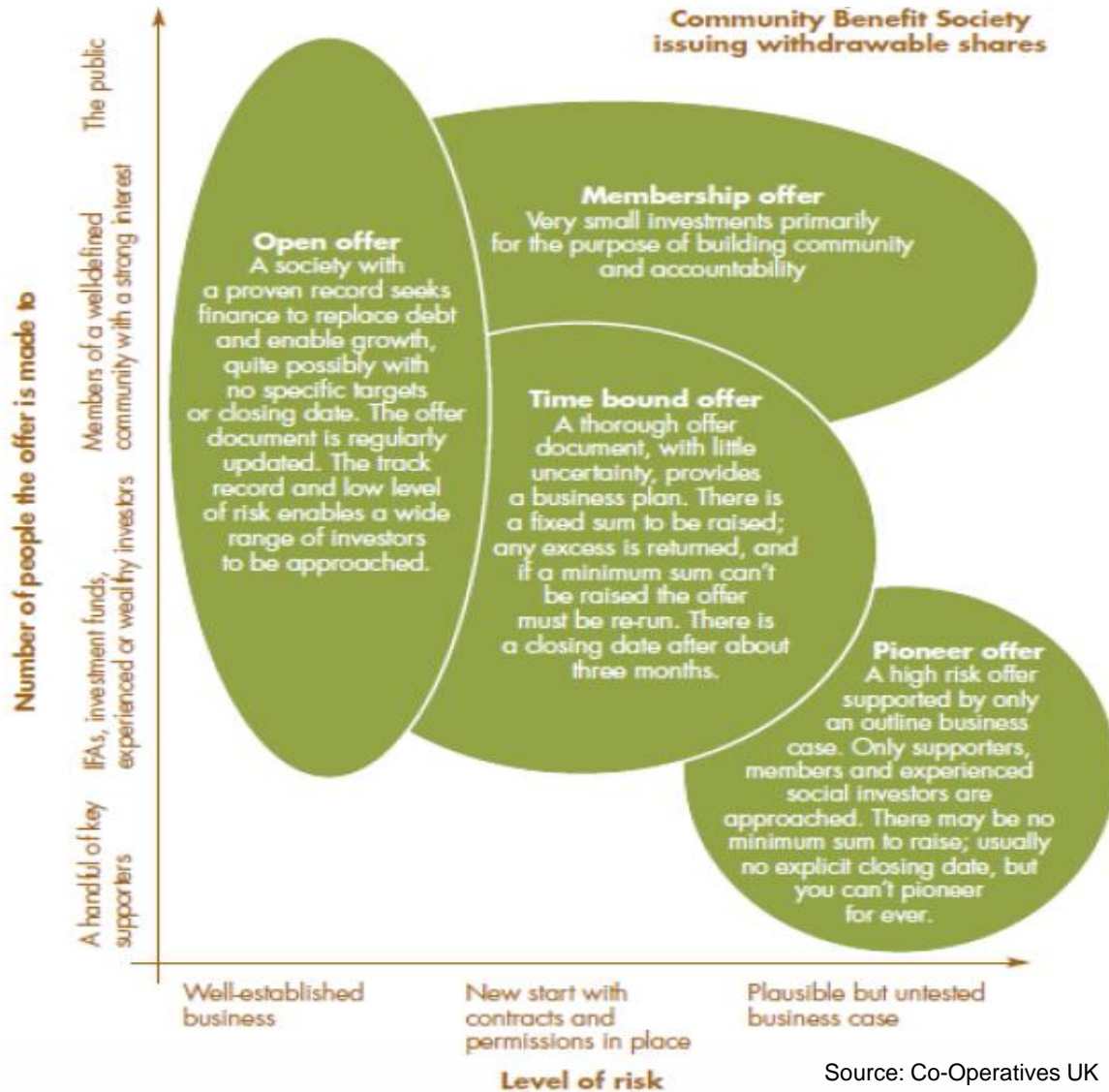
The surplus is spent on community benefit or ploughed into future schemes.
 Members decide how profits are allocated.
 In a co-operative, members receive a return.

Energy Coop investment risk at different development stages.

Phase	Stage	Type of Finance	Type and level of Risk
Pre-development	<ul style="list-style-type: none"> ● Identify RES technology ● Siting. ● Project Pre- feasibility (Go/No Go decision) 	<ul style="list-style-type: none"> ● Grants ● Soft loans ● Angel money (Self financing) 	<ul style="list-style-type: none"> ● High risk – little formal funding available, even as seed funds. ● Financial institutions require guarantees in case energy production revenue does not repay loan interest.
Development	<ul style="list-style-type: none"> ● Feasibility study. ● Business plan. ● Permitting process. ● Grid access permits. 	<ul style="list-style-type: none"> ● Equity. ● Grants. ● Loans. ● Seed capital 	<ul style="list-style-type: none"> ● Patrimonial guarantees are required by commercial banks.
Construction	<ul style="list-style-type: none"> ● Construction ● Connection to the Grid. 	<ul style="list-style-type: none"> ● Loans ● Grants ● Venture Capital. 	<ul style="list-style-type: none"> ● Lenders are willing to take construction risk if they are allowed to appoint an independent consultant to perform Due Diligence on contracts, business models, construction budget and performance. He supersedes the Coop's project management authority.
Operation and Maintenance	<ul style="list-style-type: none"> ● Production. ● Maintenance. 	<ul style="list-style-type: none"> ● Revenue from Energy production. ● FIT for RES-E. 	<ul style="list-style-type: none"> ● Revenue at risk (Volatility) ● Regulatory – FIT change risk. ● Financial viability of Contractor and Equipment vendor and their warranty credibility.

A U.K example.

Class of Share	Description	UK Regulation
Withdrawable Shares	<ul style="list-style-type: none"> ● Non transferable ● Not subject to speculation. ● Can be withdrawn by members. ● One share (Member) – one vote. 	<ul style="list-style-type: none"> ● Not regulated by the Financial Services Authority (FSA).
Transferable shares	<ul style="list-style-type: none"> ● Can increase or decrease in value. ● More suitable if larger amount of capital are needed (> 1M EUR). ● Improves cash flow stability and working capital availability. ● Shares are less liquid than above case. ● One share (member) – one vote. 	<ul style="list-style-type: none"> ● In case an Energy Coop wants to raise capital below 6M EUR, the prospectus is authorized by an FSA authorized lawyer. ● No time restrictions on the process, the Coop controls the timeline. ● The Prospectus has to be filed with the FSA.



Transparency and accuracy in offering statements remains a priority

In Denmark shares are being sold at an **early stage** in order to allow reaching investment-readiness, and;

shares are being sold at the **development stage** to fund the construction stage.

Individuals provide working capital for the establishment of the co-op;

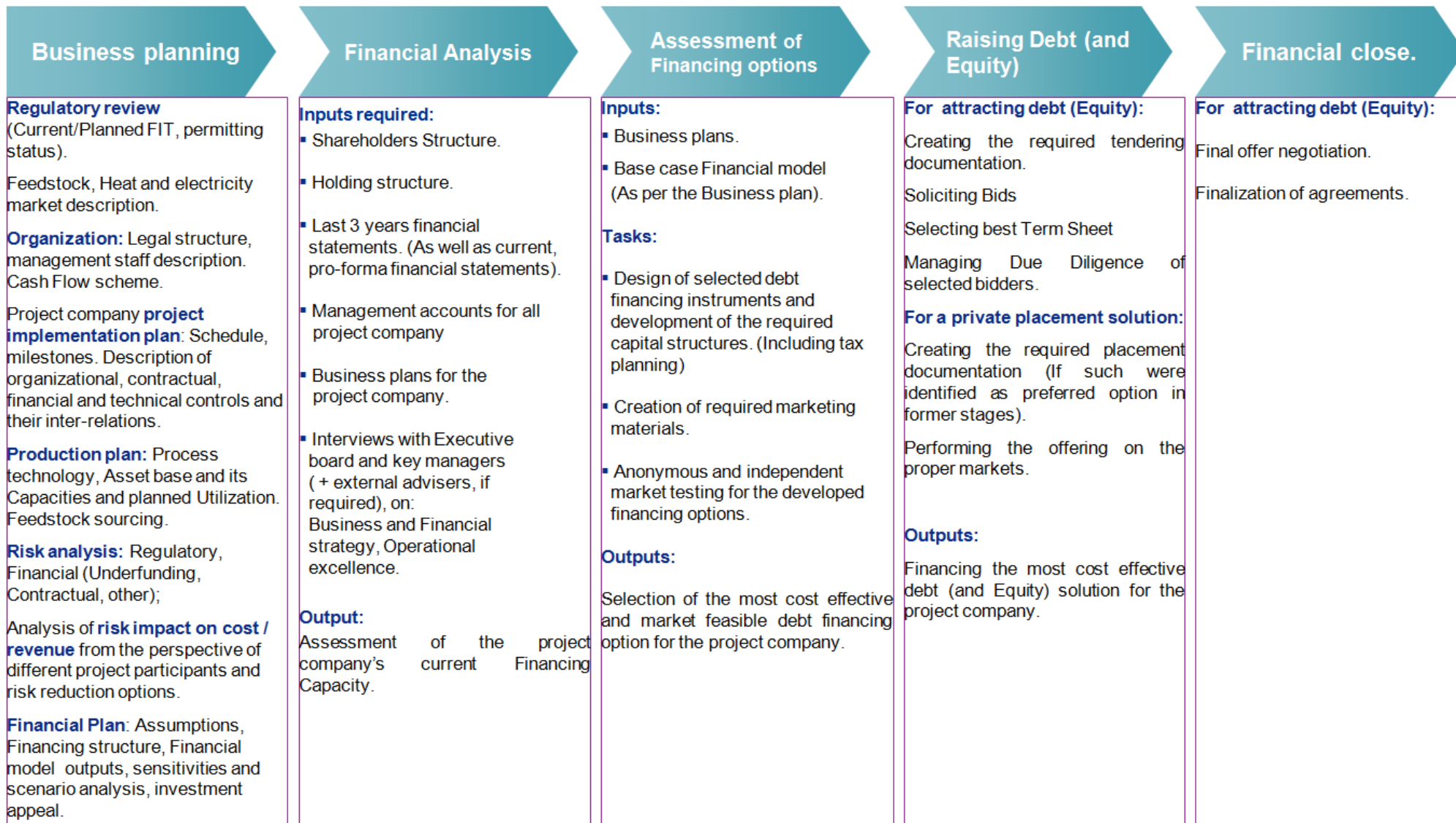
that initial subscription is lost if the project fails or is treated as a down payment on shares if the project is successful.

The asset value of shares is depreciated over time, which means they are treated more like annuities than equity

Beyond community finance, a **co-ops ability to access long term-debt** is also important especially where high up front costs are needed

Source: Co-Operatives UK

Same funding process for all – Energy Coop or not.



General incentives for communities and their citizens to realize such projects are:

- Feed-in tariffs: provides for predictability of returns and assists in lower end user utility prices.
- Reputation: The community wants a “Green” image (Moral, social and economic benefits attached).

It is always a question of how the project company is established? The following are usual:

- **Cooperatives or Companionship (Genossenschaft):** At least 3 companions to promote an economic or ideal goals.

Advantages – No minimum capital required, liability only to the extent of the company assets, indirect participation in decision making of citizens via the supervisory board, return for citizens can be arranged on a flexible basis, no securities prospectus requirement, regulatory exemptions for citizen participation models.

Disadvantages – company is bound by goal, citizen may face total loss in case of insolvency of the cooperative (obligation of additional payment liability is not mandatory), administrative costs, higher liability due to the fact that a securities prospectus is not required.

- **Closed Funds (Geschlossene Fonds):**

Advantages – high flexibility in structure, accepted by the market, possibilities of tax structuring.

Disadvantages – shares are nonnegotiable, potentially higher administrative work due to decision making rights of shareholders, relatively high distribution allowance, risk of total loss

- **Limited liability company (GmbH):** Legal entity.

Advantages – accepted in the market, clear legal framework.

Disadvantages – costs of incorporation, high administrative costs, time consuming because anytime a shareholder (citizen) wants to join the company or wants to leave the company everything must be documented by a notary.

- **Limited partnership with a limited liability company as general partner (GmbH & Co. KG):** Partnership of at least one general partner and one limited partner. This is the legal structure chosen in the specific case we advise on right now

Stock company (Aktiengesellschaft): Legal entity.

Advantages – Liability of company assets, no direct decision making rights of stock holders, preference share return for citizens is negotiable.

Disadvantages – Payment of dividends varies, citizen may face total loss in case of insolvency of the company, indirect decision making right of citizens via supervisory board, costs of incorporation and administration costs.

Co-op members finance energy efficiency measures through low-interest loans;

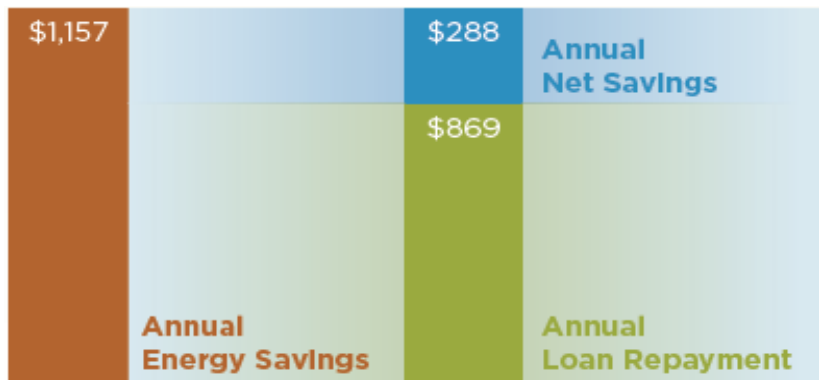
- Loans are repaid on monthly utility bills.
- Enables those without cash to make prescribed efficiency upgrades.

Loans are tied to the meter!!

- Power can be shut off for lack of payment.
- Loan stays with home (Property) if home is sold.
- These provisions eliminate need for credit check.

Federal loan program to support on-bill financing projects :

- Managed by USDA’s Rural Utility Service.
- Would provide 0% loans to co-ops and public utilities for up to 20 years.
- Co-ops would be charged the direct Treasury rate + $\frac{1}{8}$ %.



Source: The South Carolina electric Co-Op.

Program targets:

- 10% reduction in residential energy use by 2020.
- Reduce wholesale residential power purchase costs
- Maintain or improve member satisfaction

Reaching cost-effectiveness:

- To the participant: Savings enough to cover loan payments: (Payback shorter than loan term and Savings exceed loan repayment).
- For Co-op’s: Demand savings, Load factor (same demand profile).
- Long term resource. (lower Cost/kWh, less capacity investments)

Functional obstacles for an OBF model:

- Will members participate?
- Viable source of loan funds
- Centralized support function!
- Co-ops playing different roles (Supply and Demand).

Prerequisites:

Annual savings > than Loan payment !!!

20/80 rule for E.E projects:

Identify 20% of measures to produce 80% of energy savings – thereby helping reduce capital charge (and required loan repayment), while generating enough energy savings to release funds to service the loan.