Better Buildings Residential Network Peer Exchange Call Series:

Energy Efficiency Olympiad: Best Practices from Around the World (201)

August 4, 2016

Call Slides and Discussion Summary

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
  - **Matthew Lipson,** Head of Consumer Insight, Energy Systems Catapult
  - **Rebecca Ford,** Researcher, Environmental Change Institute, University of Oxford
  - **Shoaib Rahman,** MBA/MS Candidate, Erb Institute at the University of Michigan
- Discussion
  - How can international energy trends be used to inform programs in the United States?
  - How can programs determine which aspects of international programs they would like to adopt?
  - What are potential concerns or barriers to borrowing from programs abroad?
  - Other questions/issues related to international best practices?
- Closing Poll and Upcoming Call Schedule

Better Buildings Residential Network

Better Buildings Residential Network: Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Membership: Open to organizations committed to accelerating the pace of home energy upgrades.

Benefits:

- Peer Exchange Calls 4x/month
- Tools, templates, & resources
- Recognition in media, materials
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

Commitment: Provide DOE with annual number of residential upgrades, and information about associated benefits.

For more information or to join, email bbresidentialnetwork@ee.doe.gov, *or go to* energy.gov/eere/bbrn *and click Join*

International Perspectives: Insights from the UK

U.S. DEPARTMENT OF ENERGY

Learning from how people use heat at home to reduce UK CO_2 emissions

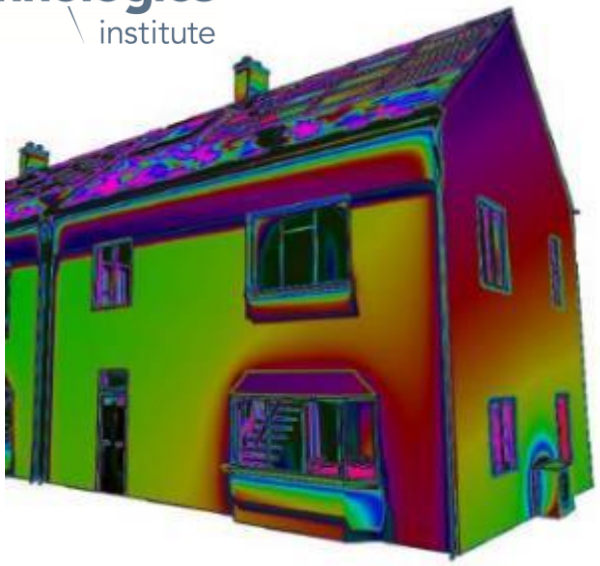
U.S. Department of Energy Better Buildings Residential Network Webinar
Energy Efficiency Olympiad: Best Practices from Around the World

Matthew Lipson
August 2016

ETI's Smart Systems and Heat Programme

Delivered by CATAPULT Energy Systems

energy technologies institute



Our Members

bp, CATERPILLAR, EDF ENERGY, Rolls-Royce, Shell, Department for Business Innovation & Skills, Department of Energy & Climate Change, EPSRC Pioneering research and skills, Innovate UK Technology Strategy Board

ETI programme associate

HITACHI Inspire the Next

"Creating future-proof and economic local heating solutions for the UK"

- Connecting together – the understanding of consumer needs and behaviour with the development and integration of technologies and new business models into…
- Delivering enhanced knowledge amongst industry and public sector
- Resulting in industry and investor confidence to implement from 2020 which enables a UK heat transition

The Energy Systems Catapult will deliver Phase One of the SSH programme as a supplier to the ETI following the transition of the SSH programme team to the Catapult. From 2017 the Catapult will be responsible for delivery of Phase Two of the programme independently of the ETI.

Decarbonising heat is the most cost effective way to tackle climate change in the UK, but

Today fewer than

4%

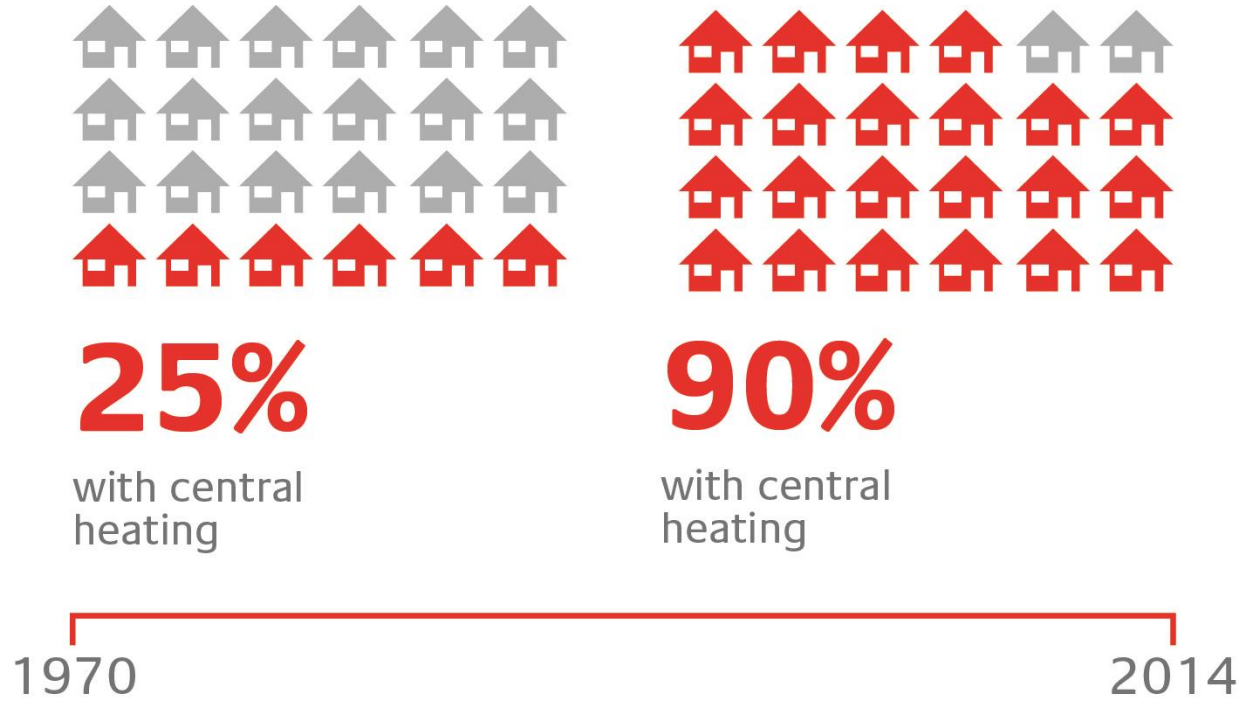
have low carbon heating

and

90%

prefer gas central heating given the choice

Rapid change is possible



We must focus on tackling 3 key challenges

1. Improve low carbon heat experiences
2. Simplify installations
3. Enhance control

Based on 5 stages of consumer research

CATAPULT Energy Systems

Stage 1

Build on evidence (>500 papers)

Stage 2

Found areas of consensus and contention (workshops with 153 participants in four parts of the UK)

Stage 3

Saw how home life shaped heat use (visited 30 homes 4 times in a year), looked beneath what people say (sensors), related behaviour to energy used (model of 8 homes)

Stage 4

Quantified varying heat practices (surveyed 2,313 households at home)

Stage 5

Assessed solutions (45 homes with insulation, district heat, heat pumps, or 'smart' controls) and discussed smart heat expectations (tested concepts with 30 people)

Sensors

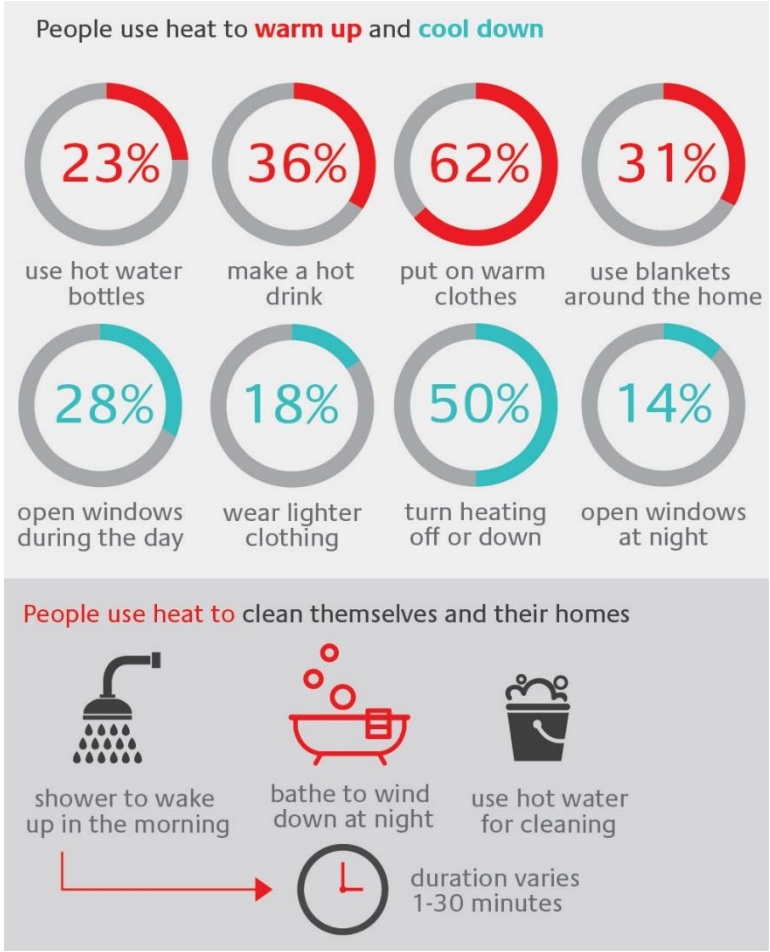
Partners

Loughborough University

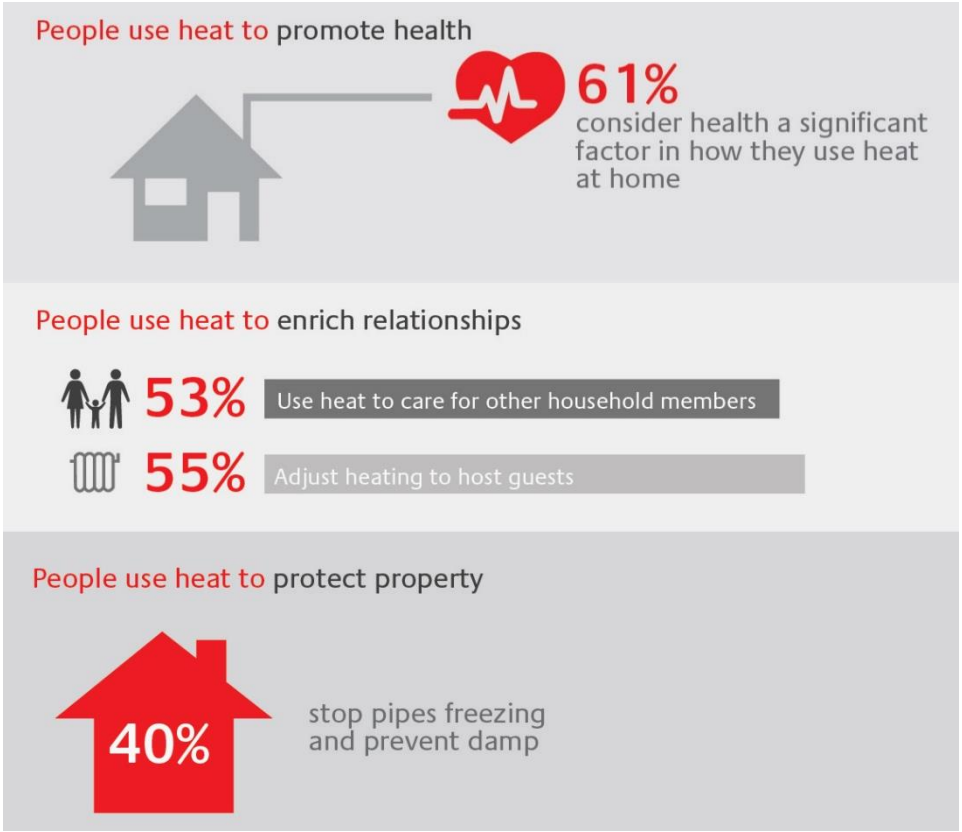
new experience
USER EXPERIENCE | RESEARCH & DESIGN

UCL NatCen

Improve low carbon experiences



- Systems should allow people to use heat to get clean and comfortable in diverse ways



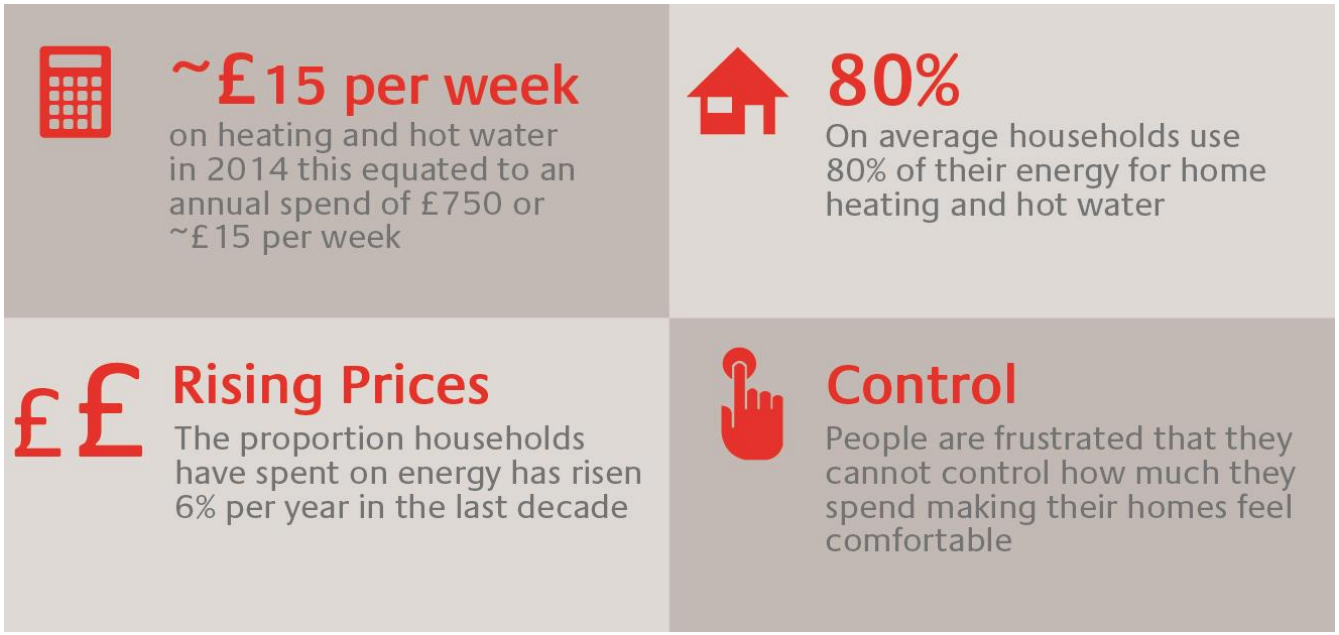
Simplify low carbon heating installations

Location limits what solutions will be available in any area

and many homes will need modifying to make sure solutions work well

- Design solutions that can be installed in a similar timeframe to replacing a gas boiler
- Encourage people to prepare their properties during renovations
- Enable people to consider thermal details when making renovation decisions
- Explain what solutions will work in each area

Enhance control



- Public concern over heating bills conceals private confusion over what heat costs
- People hold very different views on how they think heat should be used
- Controls should help people get the heat experiences they want
- Improved controls could prove key to unlocking deeper decarbonisation

Consumer challenges to decarbonising heat

Improve low carbon heating experiences

Make low carbon heat systems simple to install

Make low carbon heating easy to control

For more information


CATAPULT
Energy Systems
Thanks

Insights from the UK

- To reach UK consumers, communicate in targeted ways, because **homes are emotional spaces**:
  - People reported that their priorities for home heating are **health**, **enriching relationships**, and **property protection.**
- To reach a larger audience and have a greater impact on reducing carbon emissions, low carbon heating should:
  - **Match the diversity of individual preferences** to allow people to get clean and comfortable in diverse ways.
  - Have a **similar installation timeframe** to a gas boiler or other equipment replacement.
  - Give individuals a greater degree of **control over the heating** of their homes.
- **People need to know what solutions will work in their area** and how to prepare their homes for low carbon heating systems.

International Perspectives: Insights from New Zealand

U.S. DEPARTMENT OF ENERGY

Community Uptake of New Energy Technology: Insights from New Zealand

Dr Rebecca Ford, University of Oxford

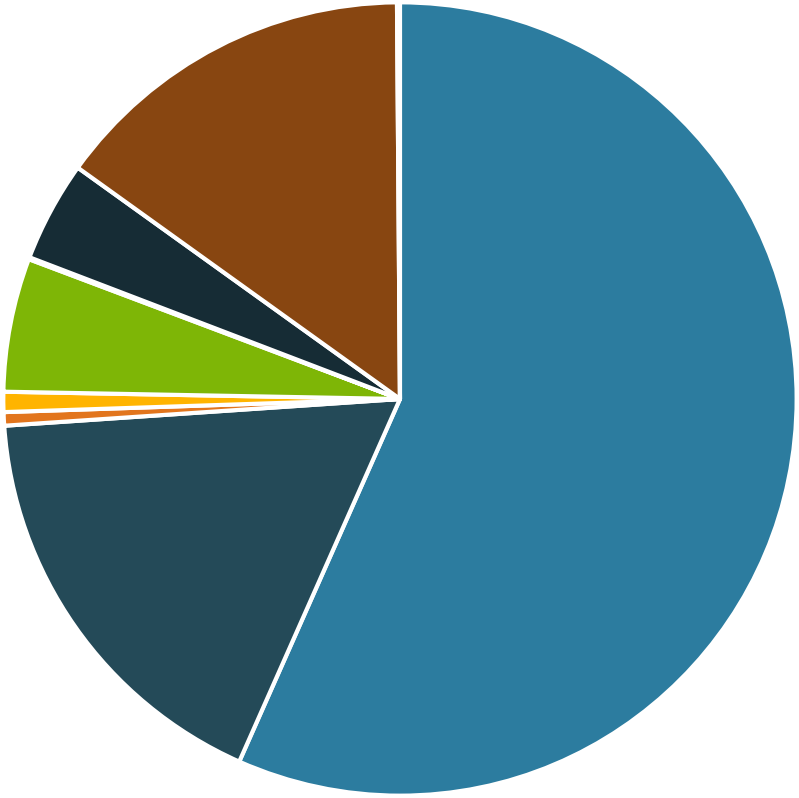
U.S. DOE Better Buildings Residential Network webinar, 4 Aug 2016

Setting the Scene

New Zealand


Scandinavia
United Kingdom
Central Europe
Russia
Alaska
Canada
USA
Korea
Japan
China
Israel
Iran
Algeria
Libya
Egypt
Saudi Arabia
India
Taiwan
Hong Kong
Philippines
Hawaii
Mexico
Sudan
United Arab Emirates
Thailand
Malaysia
Singapore
Indonesia
Colombia
Peru
Brazil
Fiji
Australia
South Africa
Chile
Argentina
Tasmania
New Zealand
Antarctica

Electricity Generation



- Hydro
- Geothermal
- Biogas
- Wood
- Wind
- Solar
- Oil

81%

No policy or financial support for solar PV (or electric vehicles)

'Outrage' at solar power buyback cuts

Updated at 8:00 am on 7 November 2014

Supporters of solar power are shocked by Meridian Energy's moves to slash the price it pay
back from new solar customers - the second company to do so.

Solar Power: Still shining bright

By William Guy

11:21 AM Tuesday Dec 2, 2014

Green Living | Sustainable Business

108 8 0 3

Solar buy-back rates have been reduced by the power companies, but it appears the boom will carry on regardless.

Friday August 28th, 2015

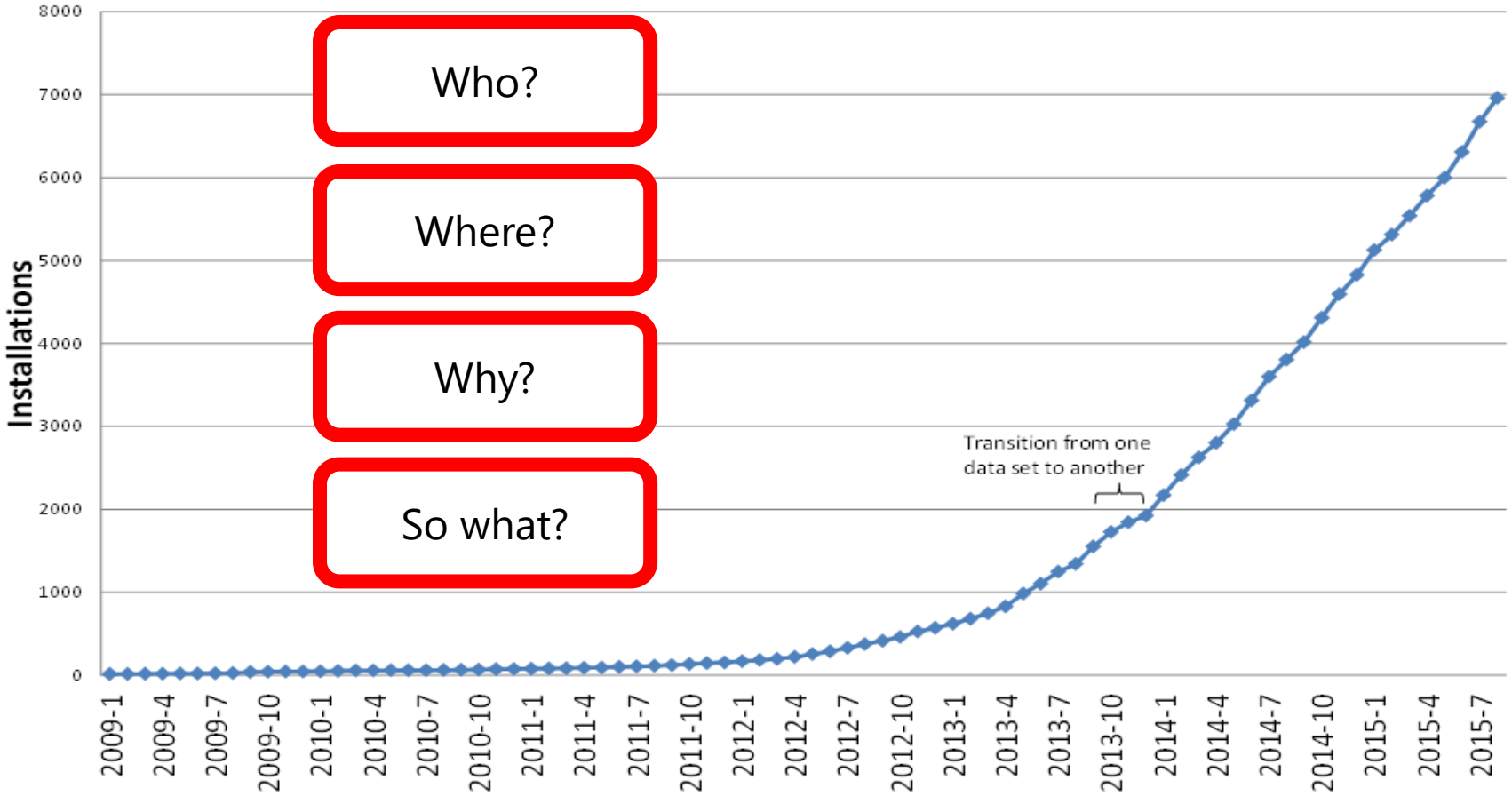
The Daily Blog
Read The Other Side Of The Story

FRONT PAGE | DAILY BLOGS | DECONSTRUCTING HEADLINES | MEDIA WATCH | THE LIBERAL AGENDA

Power companies drop solar buy-back rates, but equity's a low priority

By Christine Rose / December 22, 2014 / 16 Comments

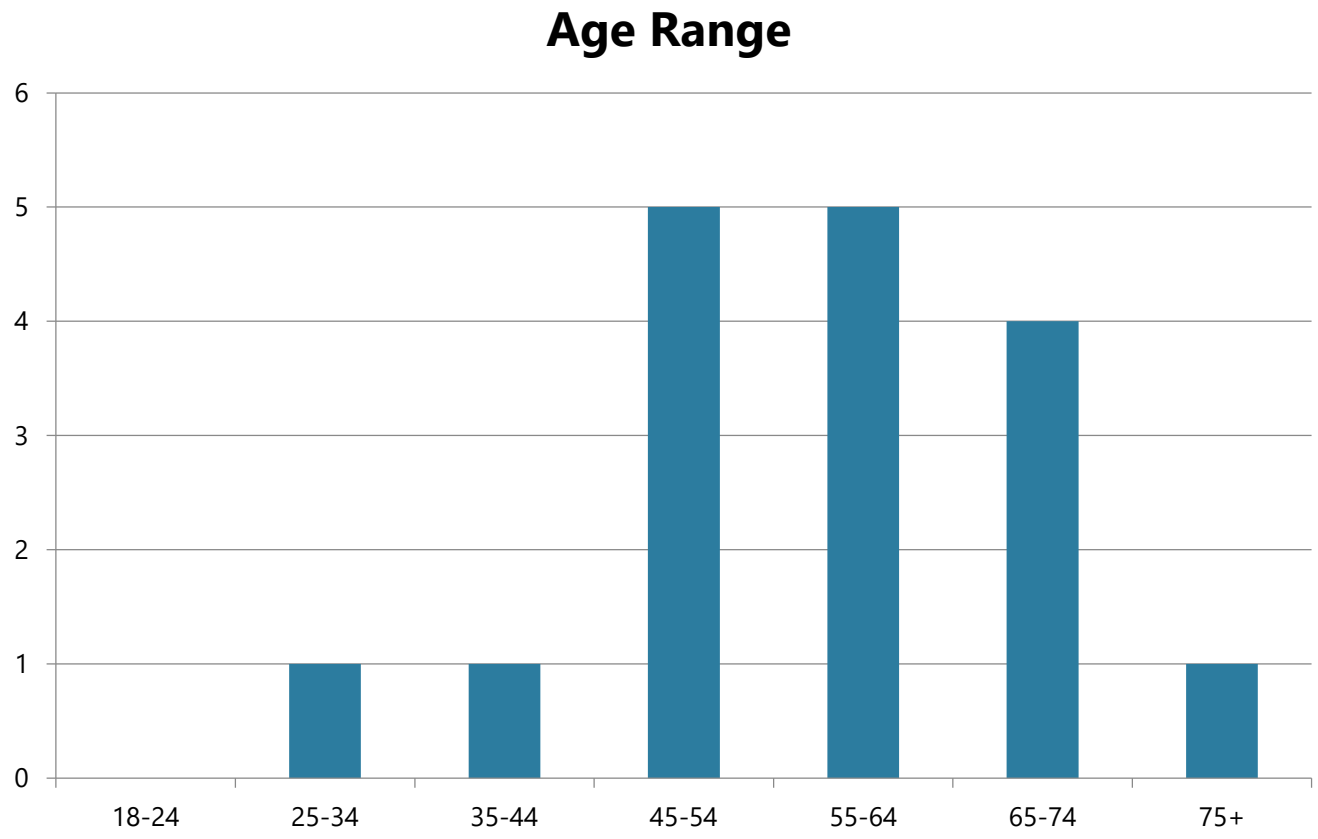
New Zealand PV Uptake



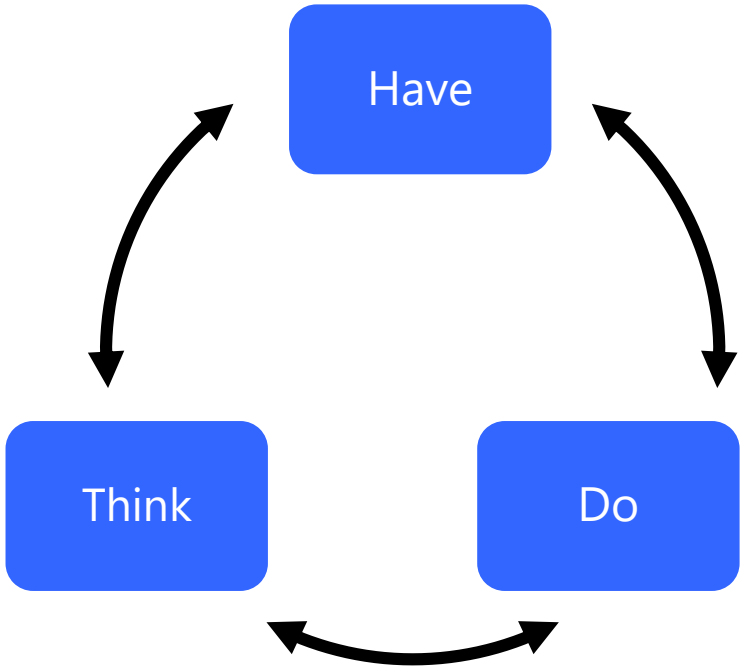
Who

Interviews with early adopters across New Zealand

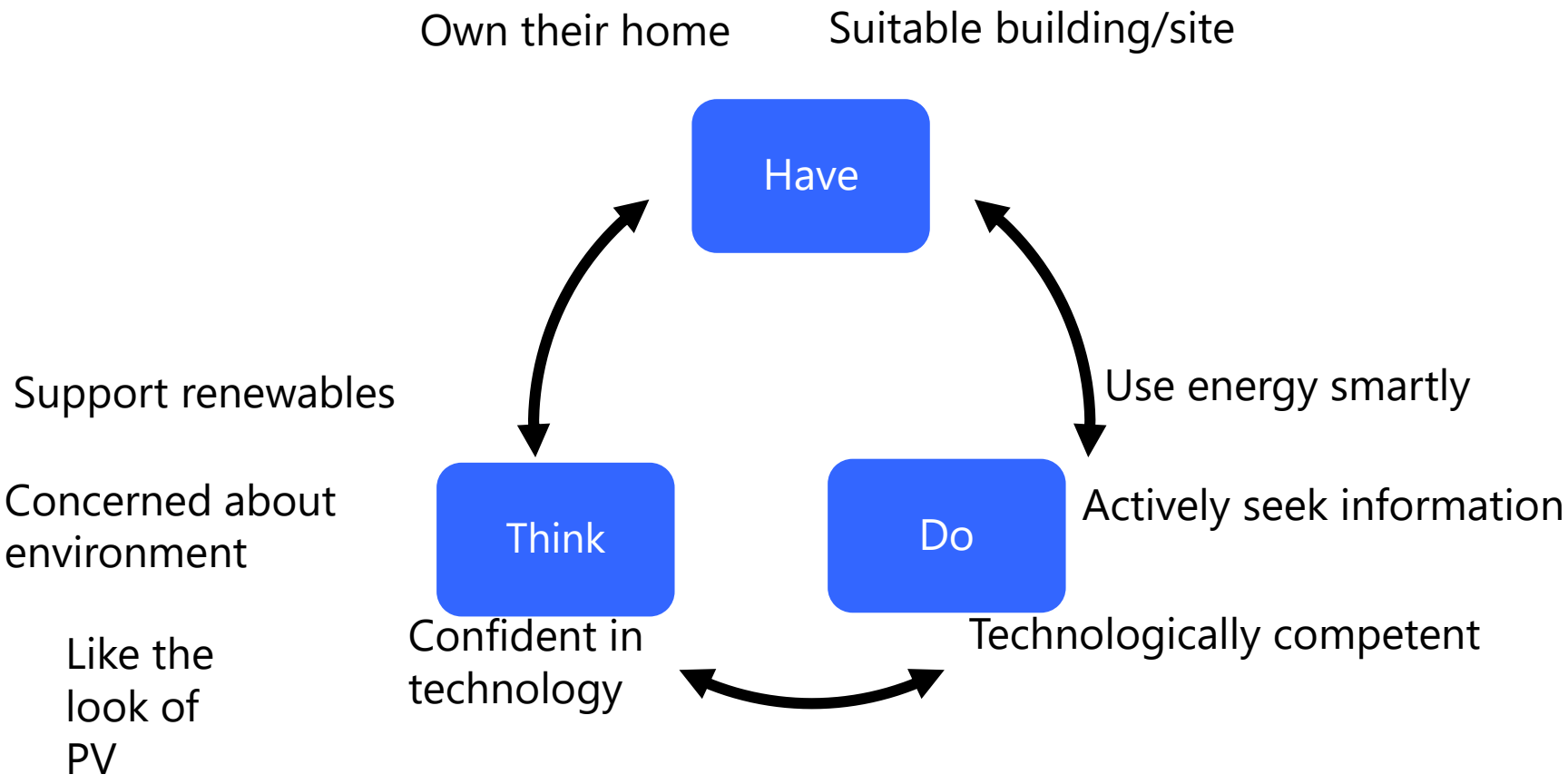
- Spread across income bands
- All in ‘separate’ houses
- Majority planning to stay in the property long-term



The Energy Culture of Early Adopters



The Energy Culture of Early Adopters



The Energy Culture of Early Adopters – An Example

Have

Think

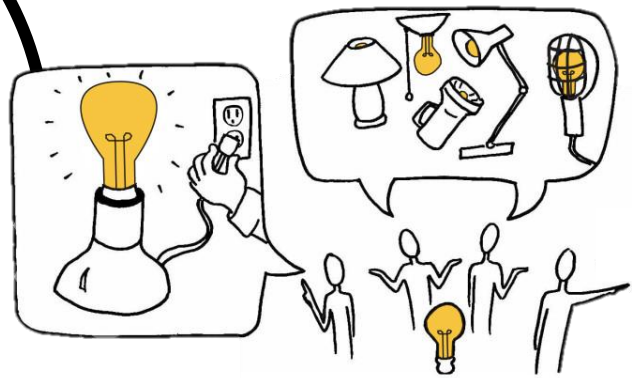
Do

Comfort

Desire for independence

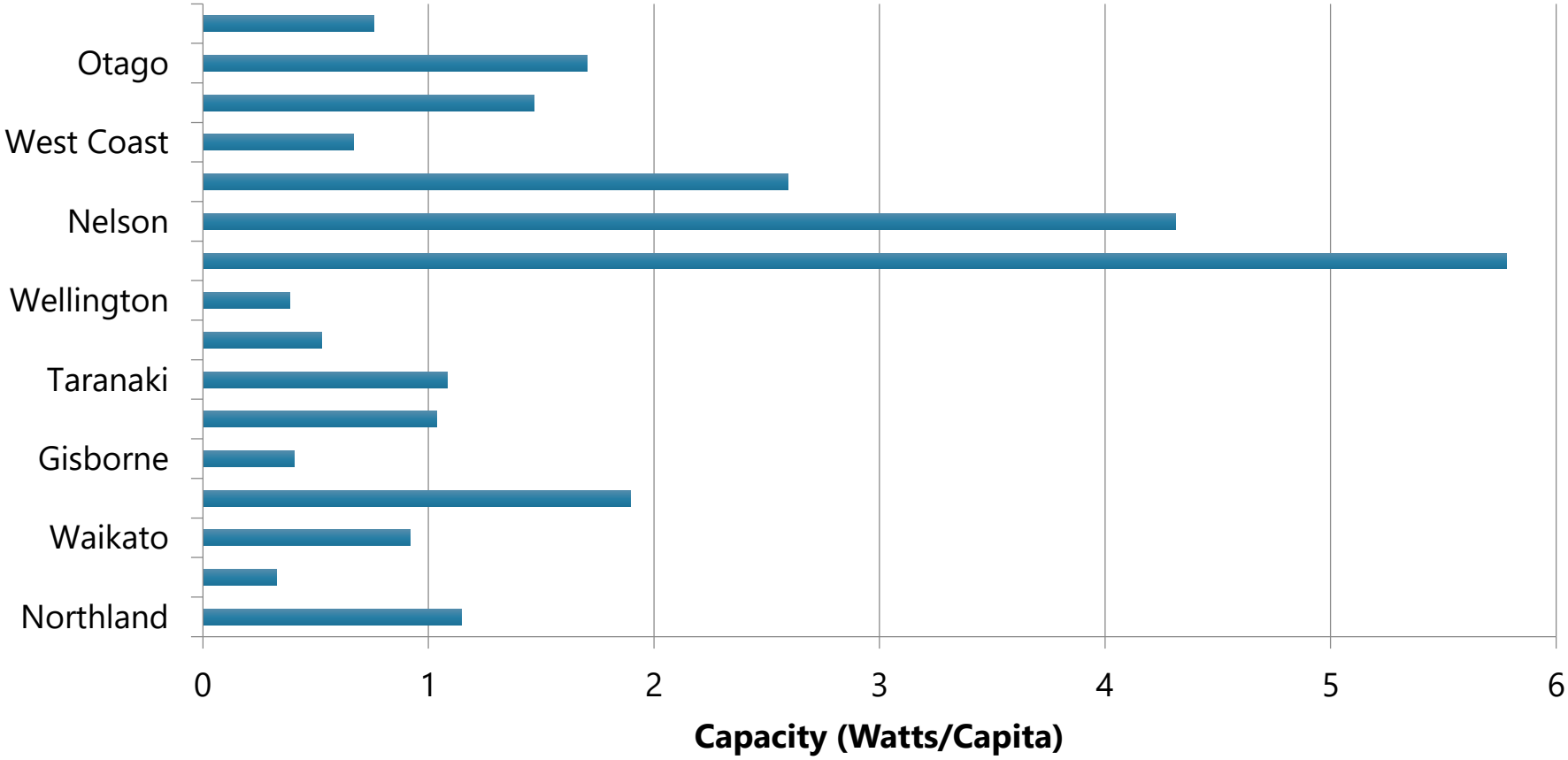
Future proof NZ

Self-sufficiency



Where

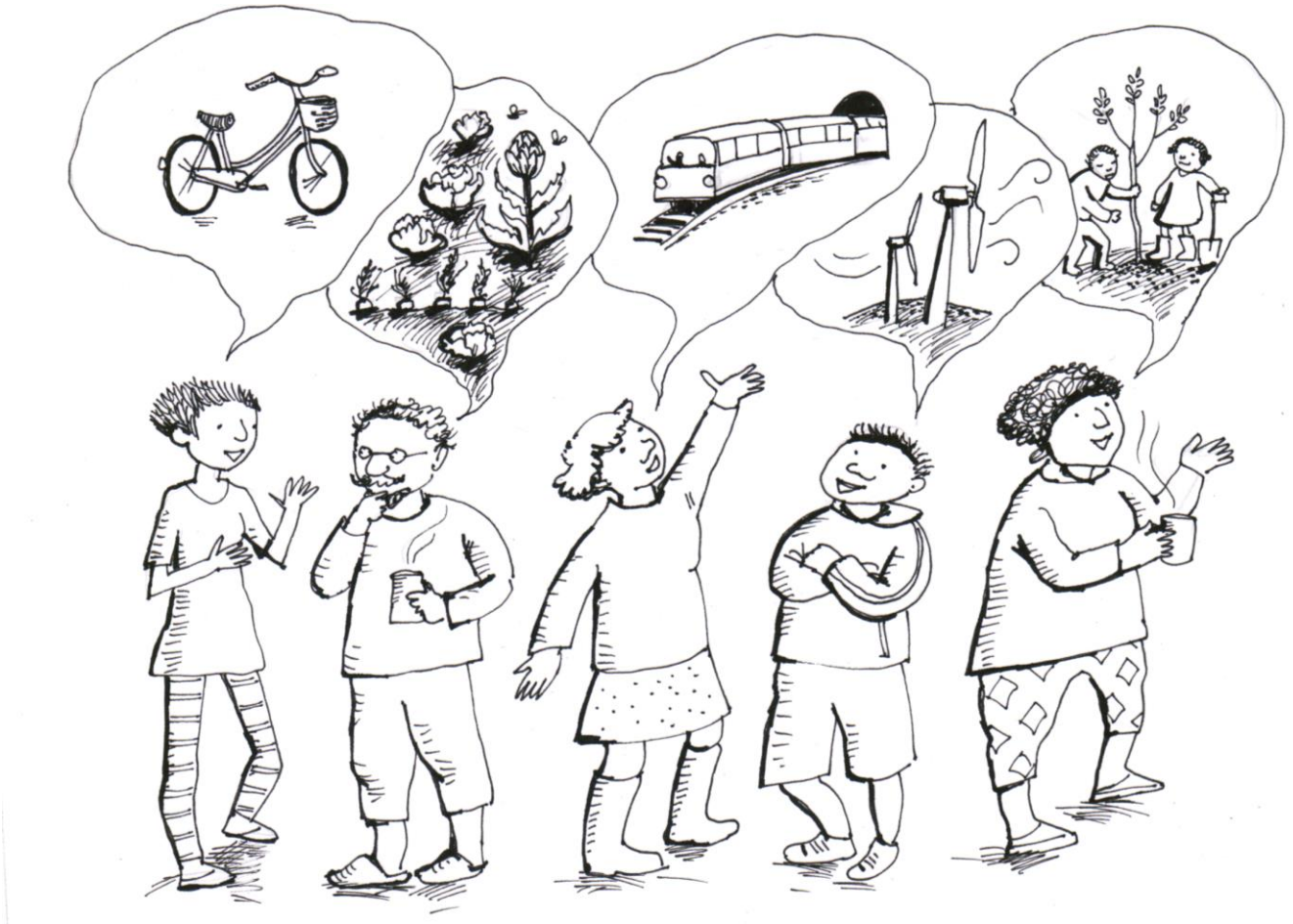
Distribution of PV uptake in New Zealand



From the Rise of Prosumers

To the Rise of Prosumer Communities

A Wish List of Actions



Why

Independence (from supplier, in control of future outgoings)

GREEN Grid: Interviews with early adopters

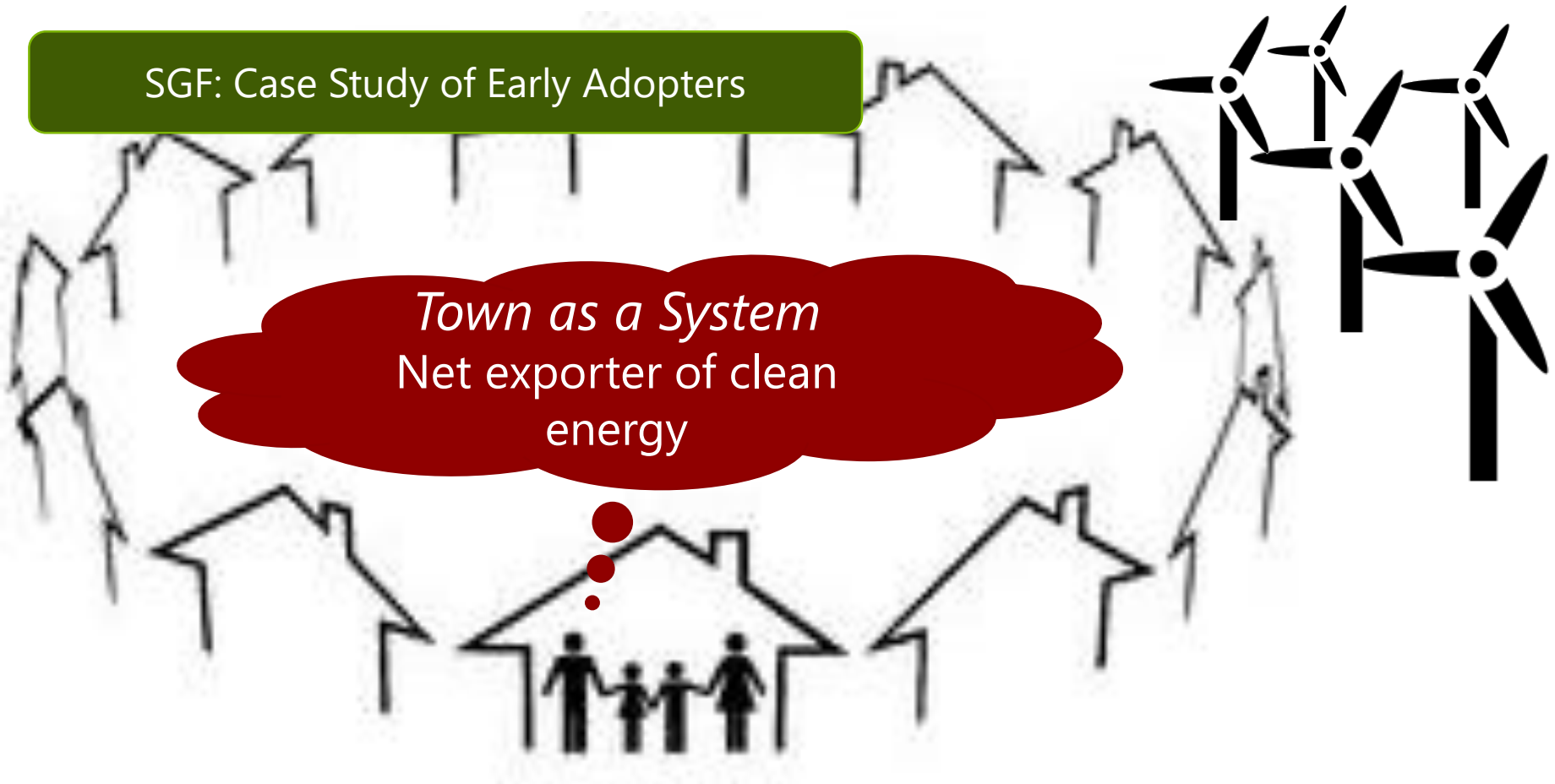
"Because I would be generating my own electricity… I liked the idea of having some independence. I also liked the idea that over its lifetime the value would increase because prices of electricity will increase."

"Economical, we don't have a lot of money coming in and I'll be going on a pension in a few years, and so we were wanting to future proof our bills and we thought that this was a really good, long term investment for us…"

Resilience / energy-security

Local and sustainable

SGF: Case Study of Early Adopters



Social cohesion / philanthropy

SGF: Case Study of Early Adopters

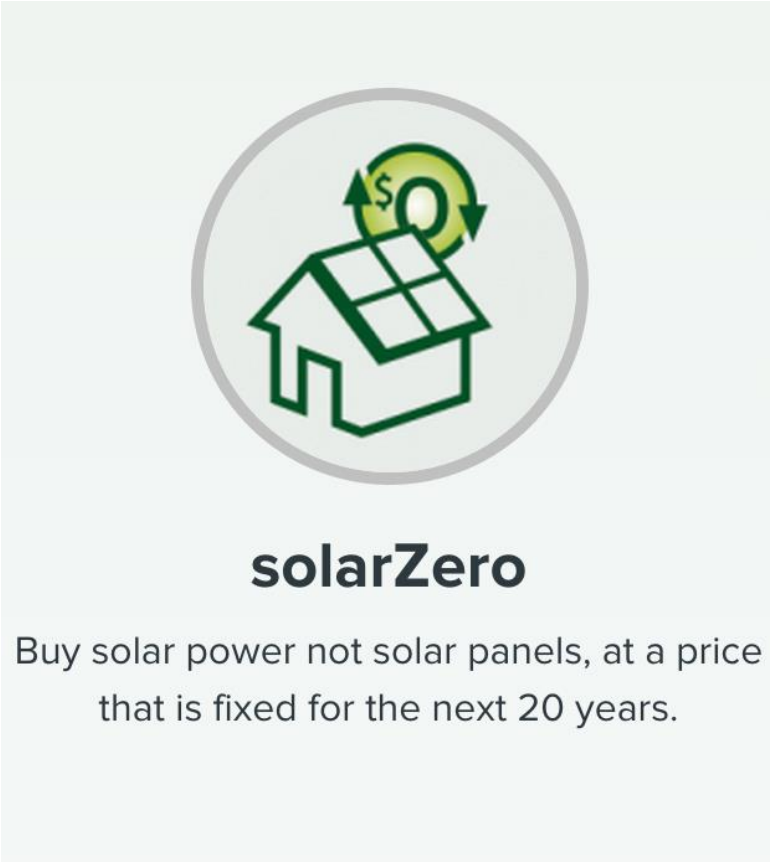
So what?

Desire for independence

Energy Cultures National Household Survey

I am happy with electricity from electricity companies	30%
I would like to supplement my electricity with my own generation (e.g. Photovoltaic, micro wind generation, etc.) while staying attached to the national grid	38%
I would like to be independent of the national electricity grid and generate all my own power	19%
Don't know	13%

New business models

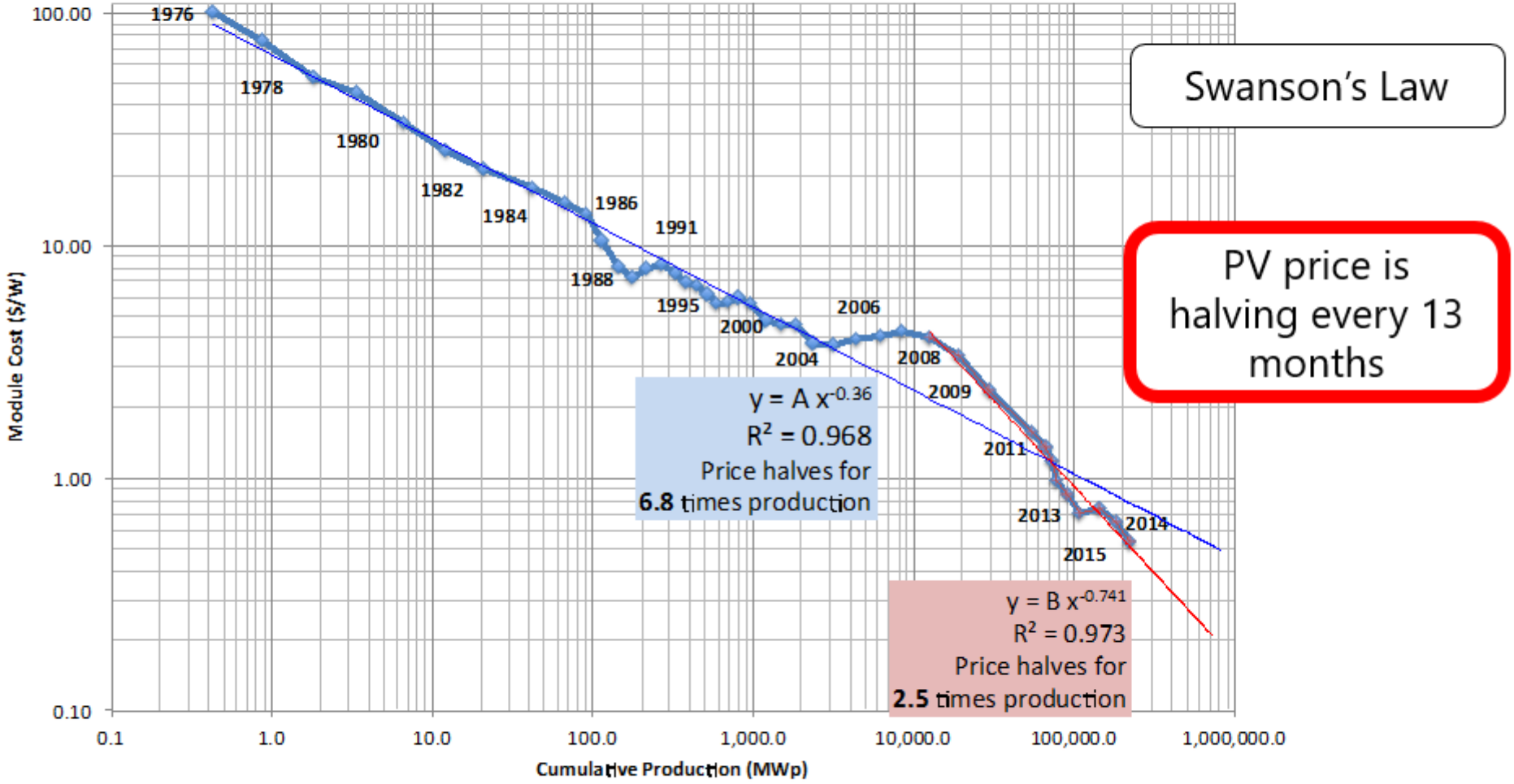


Panels installed for free

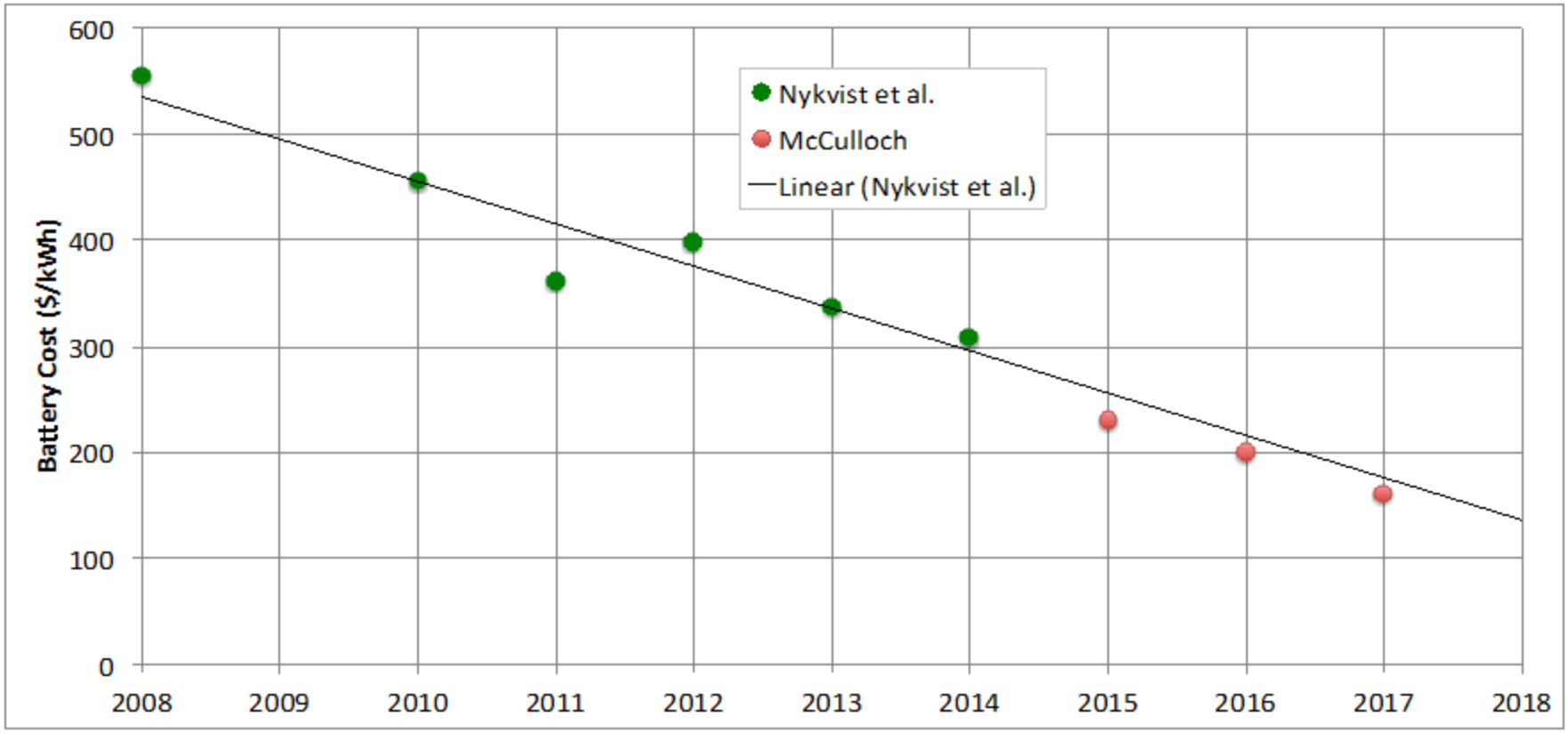
Power prices lower than national power prices

Prices fixed for 20 years

Rapidly falling cost of solar



Battery price trends



Desire for Greater Control Over Energy

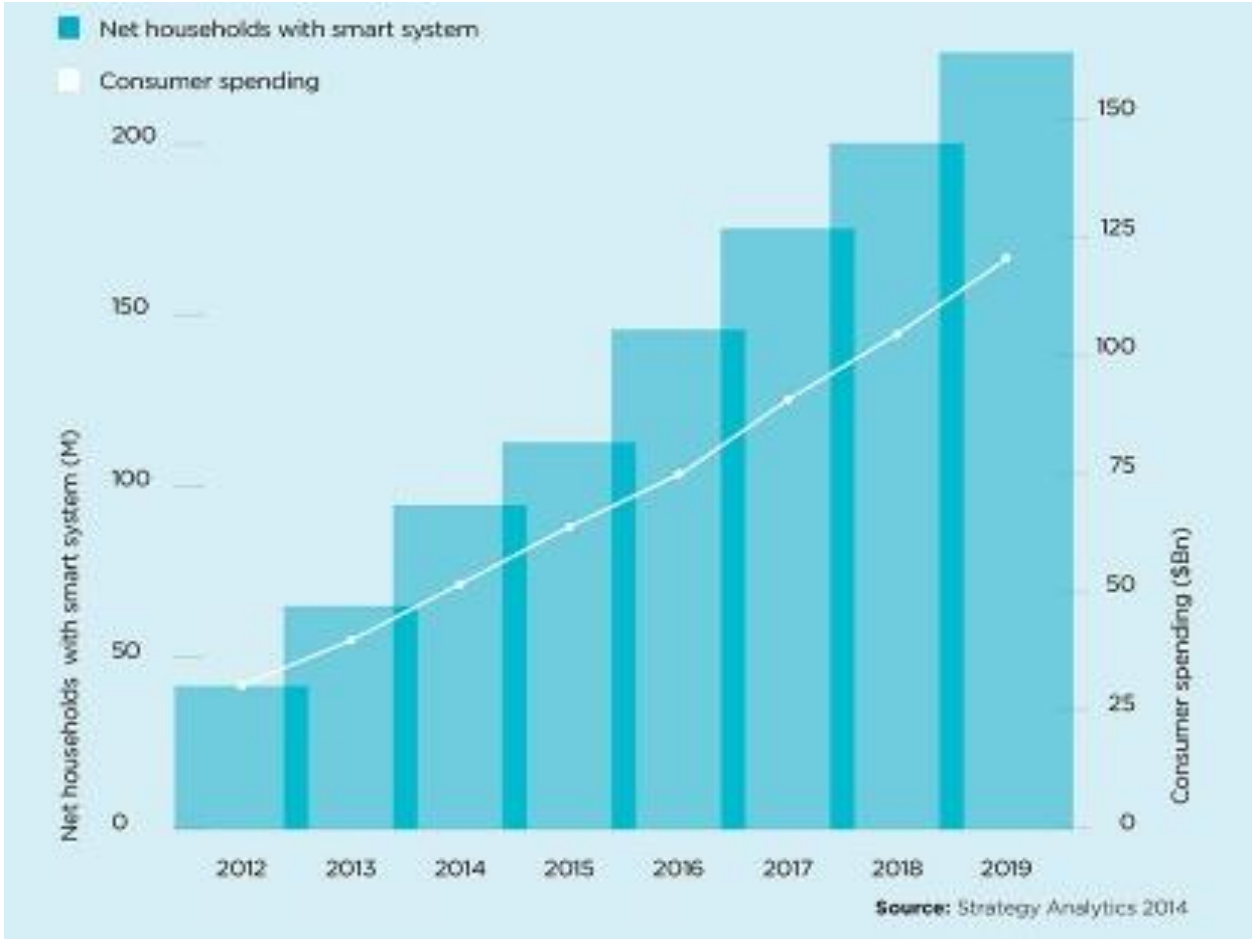
SGF: HEMS Survey

Remote control of appliances (79%)

Schedule appliances to run at pre-defined times (71%)

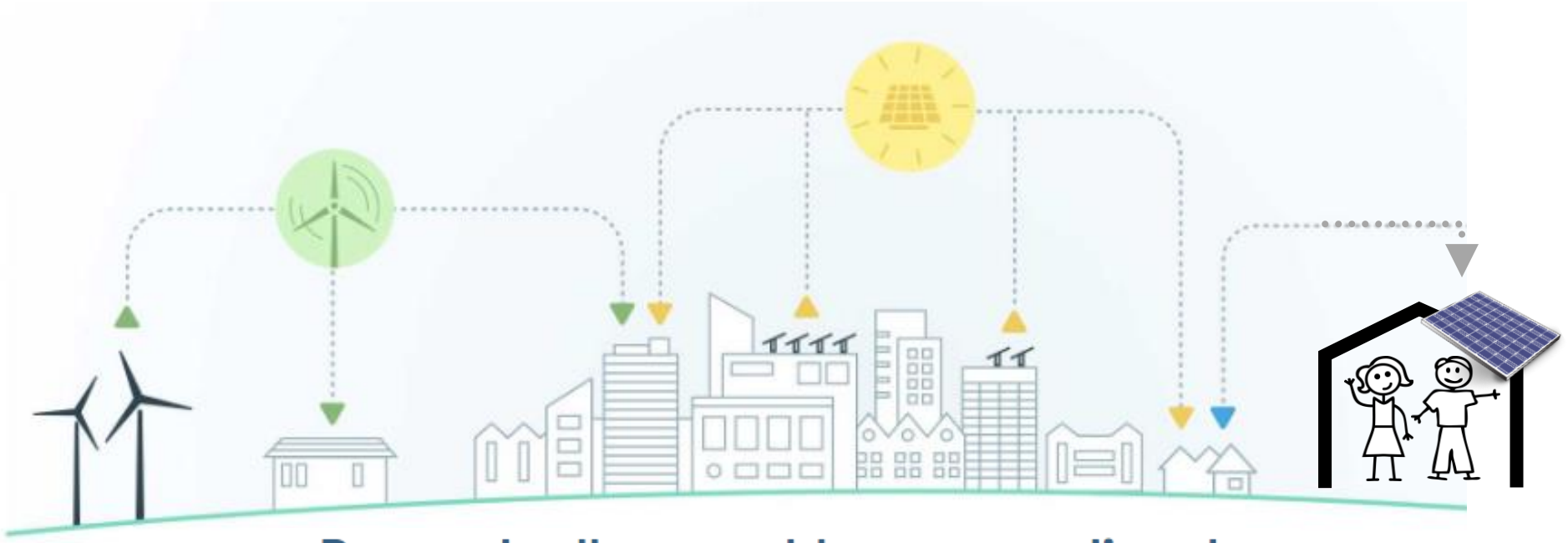
Remotely monitoring appliances (73%)

Smart Home Market Expansion



GLOBAL CONSUMER SPENDING IN SMART HOME MARKET WILL REACH $100 BILLION BY 2018

(Community) Peer-to-peer energy trading



Buy and sell renewable energy - directly

Piclo is an online marketplace for energy - giving renewable generators and commercial consumers more control and transparency than ever before.

Implications

- Localised issues with low voltage management? Harmonics, bi-directional flows?
- New opportunities for better management of local/stressed networks?
- ‘New stuff’ so regulatory environment and processes not set up for this – hard for groundbreakers
- Changing nature of relationships between consumers and energy sector?
- New businesses threatening incumbent industry?

Look at the world around you. It may seem like an immovable, implacable place. It is not, With the slightest push - in just the right place - it can be tipped

Malcolm Gladwell

Ford, R., Stephenson, J., Scott, M., Williams, J., Wooliscroft, B., King, G., & Miller, A. (2014). Photovoltaic (PV) Uptake in NZ: The story so far. Centre for Sustainability, University of Otago.

King, G., Stephenson, J., & Ford, R. (2014). PV in Blueskin: Drivers, barriers and enablers of uptake of household photovoltaic systems in the Blueskin communities, Otago, New Zealand. Centre for Sustainability, University of Otago, Dunedin, New Zealand.

Ford, R., Stephenson, J., Brown, N., & Stiehler, W. (2014). Energy Transitions: Home Energy Management Systems (HEMS). Centre for Sustainability, University of Otago.

Ford, R. (2016). Smart Grid Edge Technologies Case Studies of Early Adopters (Project Report). Centre for Sustainability, University of Otago.

Ford, R., Whitaker, J., & Stephenson, J. (2016). Prosumer collectives: a review (Project Report). Centre for Sustainability, University of Otago.

Ford, R., & Peniamina, R. (2016). Smart Homes: What New Zealanders think, have, and want. (Project Report). Centre for Sustainability, University of Otago.

Insights from New Zealand

- New Zealanders are experiencing a culture shift in attitudes to make energy efficiency a priority.
- New Zealand's unique context influences people's relationship to energy use:
  - **Geography:** New Zealand is remote and individuals see themselves as hearty and embrace do-it-yourself culture.
    - Energy efficiency is seen as a way to increase energy independence, helping individuals get off the grid.
  - **Community:** There is a desire for local and sustainable solutions in the community.
    - Crowd sourcing to buy solar panels for public buildings (e.g. school buildings) can result in community savings.
  - **Environment:** Extreme weather has led to a focus on resiliency and preparedness. Energy efficiency can help provide a sense of security.

International Perspectives: Residential Solar in Chile

U.S. DEPARTMENT OF ENERGY

Market Analysis of Residential Solar in Chile

Current State, Opportunities, and Economic Impact Assessment

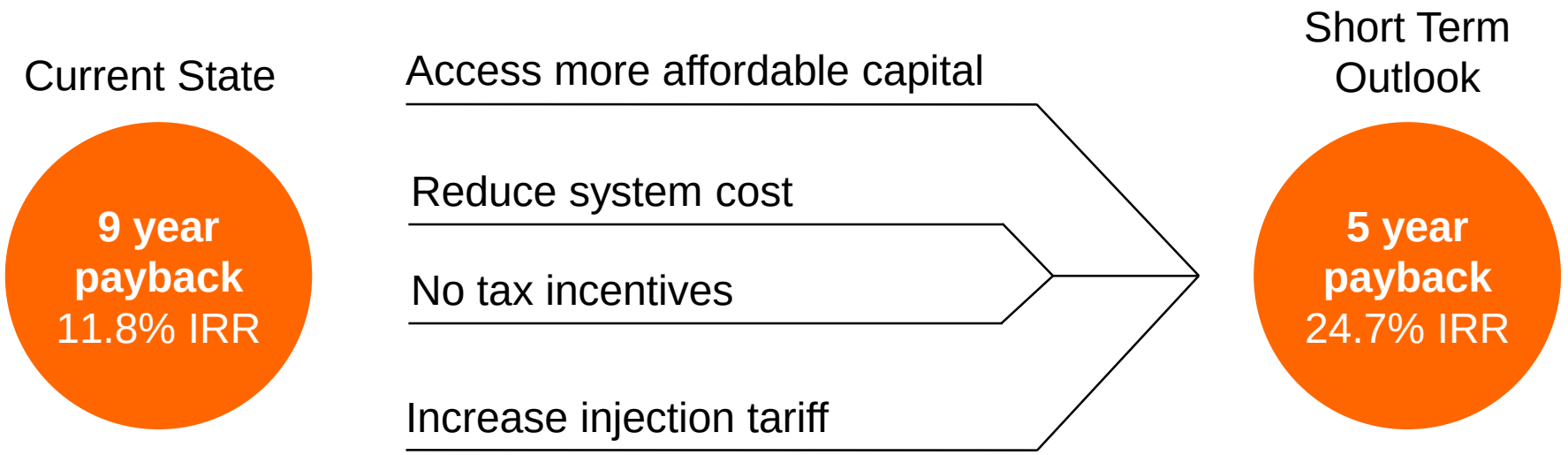
Nick Barrett, Andrew Dabrowski, Siddhartha Deo, Shoaib Rahman, Chris Selle

ACESOL | Asociacion Chilena de Energia Solar

MICHIGAN ROSS SCHOOL OF BUSINESS

Executive Summary

Under current market conditions, residential solar is not economically viable in Chile. Through financial modeling, we analyzed potential paths toward viability through four different drivers that would reduce payback period and increase IRR.



Methods for valuing the benefits of distributed generation (DG) were evaluated to help assess a potential increase in the injection tariff

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Current State of Residential Solar PV Market

Economics

Cash Flows

- Residential projects often do not demonstrate attractive returns
- Average ~9 year payback is not attractive to Chilean consumers

Financing

- Lack of access to affordable capital limits growth
- No solar-specific financing mechanisms have been created yet

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Current State of Residential Solar PV Market, continued

Public Policy

- Current public policy is oriented towards utility scale projects
- The “net billing” law was designed to enable grid connection for DG systems and to foster autoconsumption
- Most stakeholders disagree with subsidies, but believe that the current tariff does not reflect positive externalities of DG

Consumer Awareness

- Growing consumer awareness of solar PV and interest in sustainability
- Consumer expectations are misaligned with market realities

Technology & Grid

- Grid connection process is cumbersome, discourages growth
- No simplified process for smaller systems (e.g. under 10 kW)

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Financial Model: Drivers and Base Case

Through financial modeling, we analyzed the impact of four financial drivers on the viability of a typical residential solar installation.

- System Installation Costs
- Injected Energy Tariff
- Interest Rates
- Government Subsidies

Base Case:

- 3kW system in Santiago
- 35% autoconsumption
- $2.26 cost per watt

Base Case		
Equity	IRR	Payback (years)*
100%	11.8%	9.0

*Undiscounted

Sensitivity Analysis – Interest Rates and Installation Costs

Through financial modeling, we analyzed the impact of varying interest rates and installations costs on the viability of a typical solar installation.

Sensitivity of Interest Rates		
Interest Rate*	IRR	Payback**
20%	-6.8%	N/A
15%	4.6%	22.0
10%	16.0%	8.0
7%	23.7%	4.9

Sensitivity of Installation Costs		
$/Watt	IRR	Payback**
$2.26	11.8%	9.0
$2.00	13.4%	8.0
$1.80	14.9%	7.2
$1.60	16.8%	6.4
$1.25	21.3%	5.0

A 5-year payback can only be achieved by independently reducing the interest rate or installation costs to unrealistic levels.

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* Nominal interest rate
** Undiscounted payback

Sensitivity Analysis – Injection Tariff and Tax Credits

Neither increased injection tariff nor increased tax credits independently achieve a 5-year payback.

Sensitivity of Injection Tariff		
% of BT1	IRR	Payback*
58.5%	11.8%	9.0
65%	12.5%	8.5
70%	13.0%	8.2
80%	14.1%	7.6
90%	15.2%	7.1
100%	16.3%	6.6

Sensitivity of Tax Credits		
Tax Credit	IRR	Payback*
0%	11.8%	9.0
5%	12.4%	8.6
10%	13.0%	8.2
15%	13.8%	7.8
20%	14.6%	7.3
30%	16.5%	6.5

Chile should pursue a combination of drivers to make residential solar projects viable (5-year payback)

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*Undiscounted

International Market Government Incentives

United States

- Federal Tax Credits
- Full Net Metering in most US states
- Other incentives include federal grants and state/local tax credits

Germany

- FITs compensate distributed generators at a 20-year fixed rate for electricity injected into the grid
- Low cost per watt

Colombia

- Starting February 2016, Colombia provides significant tax incentives for renewable energy projects (i.e. 50% of the investment can be deducted from an individual's tax burden over 5 years)

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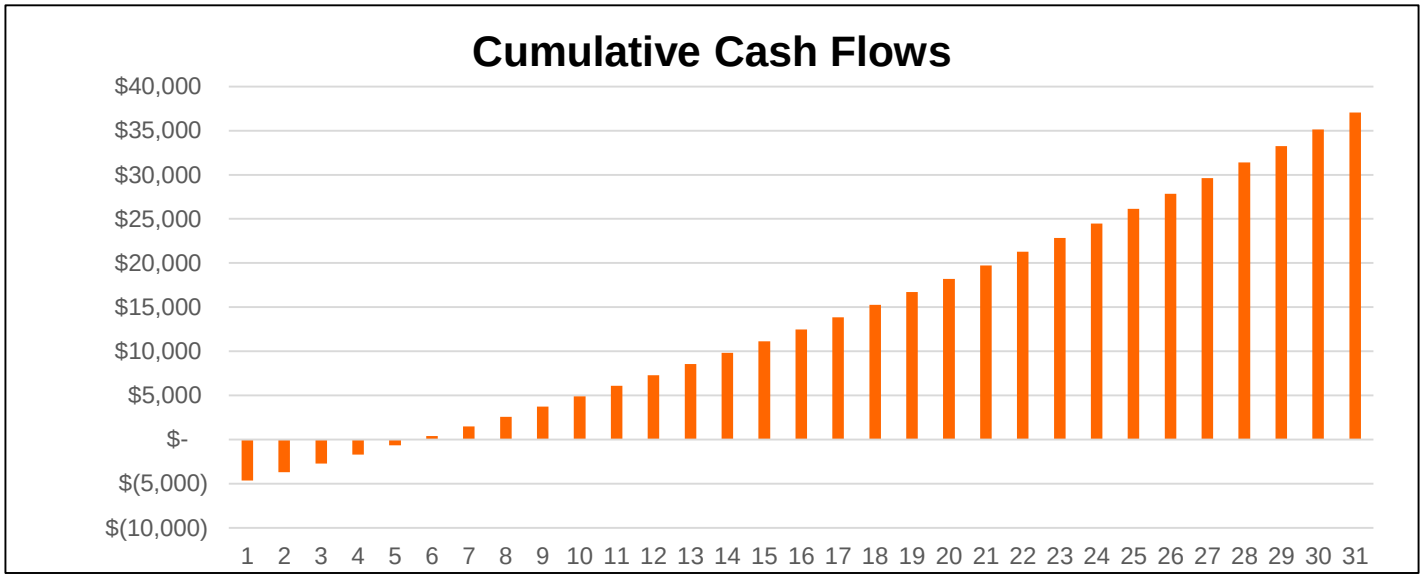
http://www.seia.org/policy/finance-tax/solar-investment-tax-credit
http://www.greentechmedia.com/squared/read/gtm-research-roundtable-the-itc-awakens
https://forms.greentechmedia.com/Extranet/95679/forms.aspx?msgid=98d3410f-c728-

Potential Impact of US Incentives in Chile

To model incentives similar to those in the US, we adjusted our baseline model to reflect a 30% tax deduction and full net metering.



Financial Viability with US Incentives	
IRR	**Payback (years)***
22.6%	**4.7**

*Undiscounted

Potential Near- to Mid- Term Outlook

The following conditions are realistic possibilities in the next 2-3 years.

Reduce installation costs to $1.83 per watt

Financing option at 12% interest rate

Increase injection tariff to include VAT (69.7%)

No government tax incentives

Base Case:

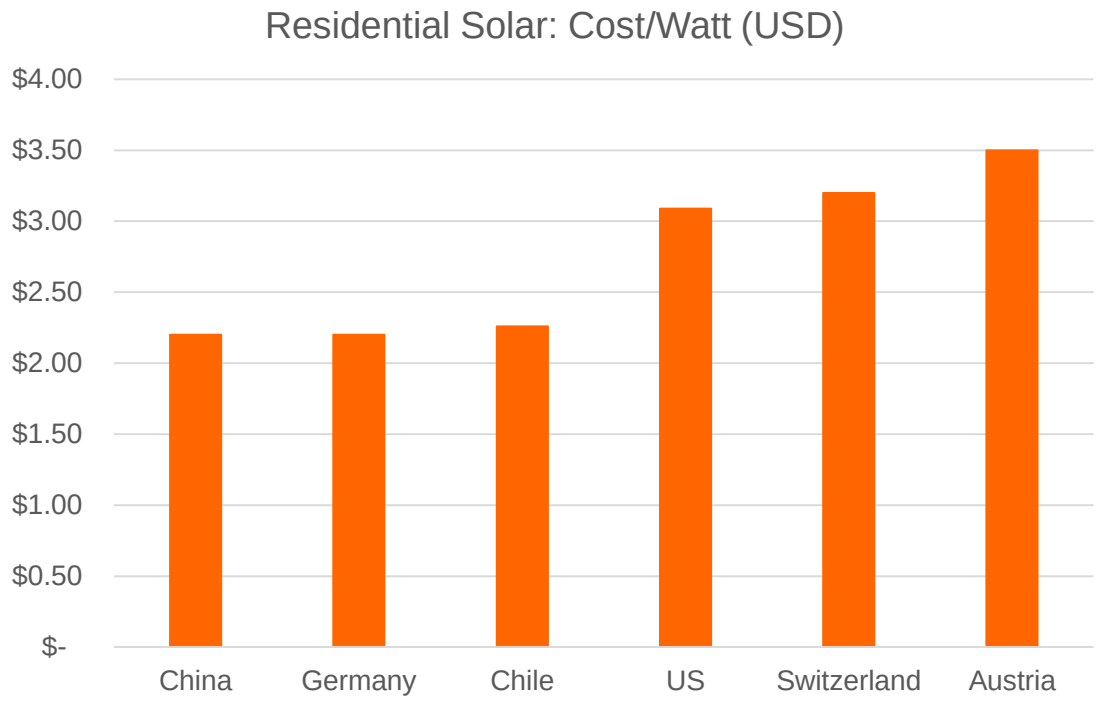
- 3kW system in Santiago
- 35% autoconsumption
- 80/20 Debt to Equity ratio

Ideal Case	
IRR	**Payback (years)***
24.7%	5.0

*Undiscounted

Reducing System Installation Costs

- Overall, stakeholders expressed that cost is a barrier to adoption
- At the same time, Chile's residential solar installation costs are lower than other mature markets like the US



*Chile and US costs are from 2015; Germany, Austria, and Switzerland are 2014.

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Sources: http://www.nrel.gov/docs/fy15osti/64746.pdf
http://www.greentechmedia.com/articles/read/solar-pv-module-price-reach-57-cents-per-watt-in-2015-continue-to-fall-thro
http://www.sciencedirect.com/science/article/pii/S0960148115303384

Reducing System Installation Costs, continued

- While soft costs in Chile are significantly less than in the US, opportunities still exist to reduce these costs through:
  - Economies of learning
  - Fast-track connection process to the grid
- Global markets for modules are also expected to continue to mature which will drive down hard costs

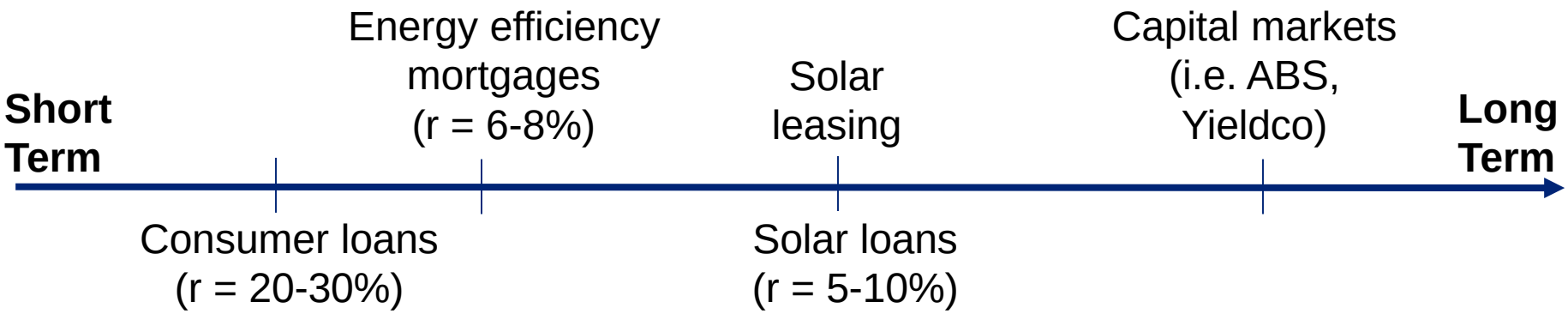
Total System Costs ($/Watt)		
	Chile	**US**
Hard Costs	1.58	1.40
Soft Costs	0.68	1.69
Total	**2.26**	**3.09**

Sources: http://www.nrel.gov/docs/fy15osti/64746.pdf
http://www.greentechmedia.com/articles/read/solar-pv-module-price-reach-57-cents-per-watt-in-2015-continue-to-fall-thro

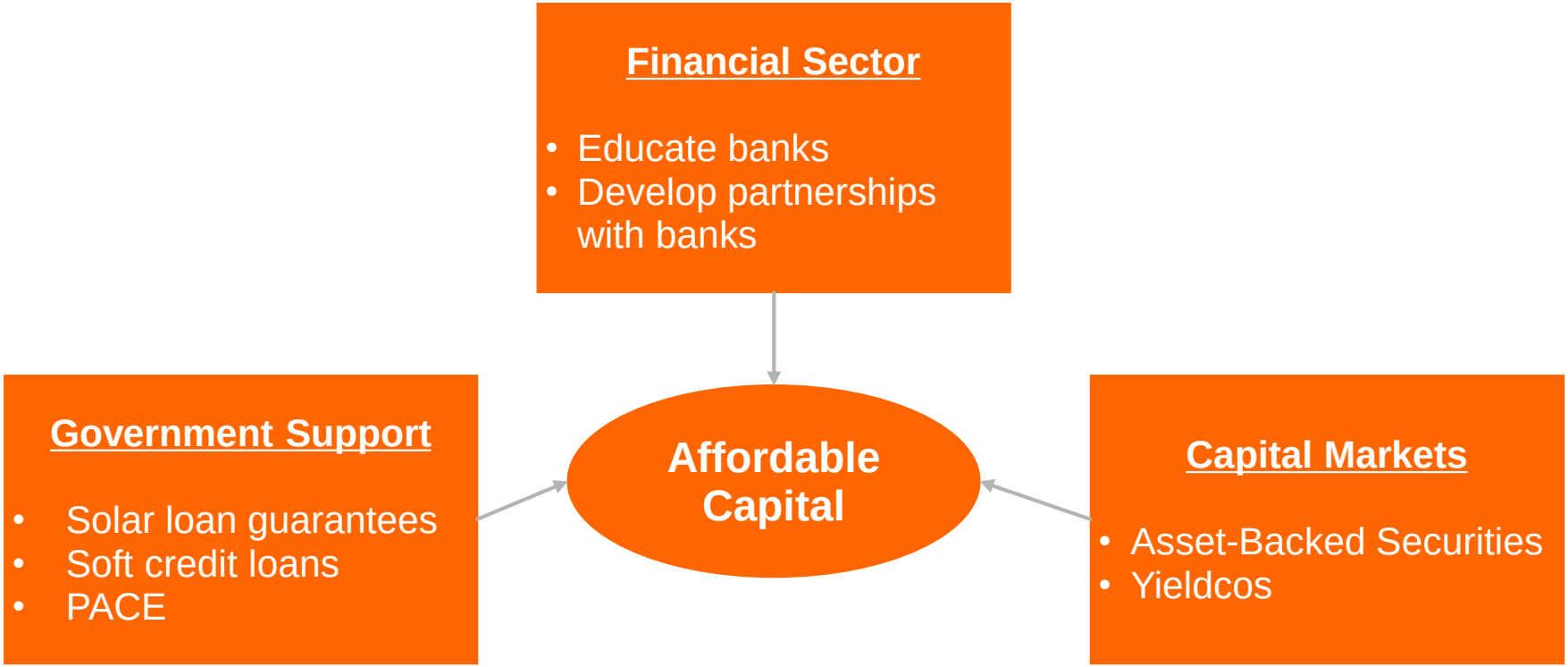
Financing Mechanisms & Decreasing Borrowing Costs

Introducing new financing mechanisms will help reduce borrowing costs and incentivize growth.

<u>Potential Timeline of Financing Mechanisms:</u>



Developing Financing Mechanisms



Rationalizing the Injection Tariff

Increasing the injection tariff has a positive impact on the economic viability of residential solar projects

However, most stakeholders view increasing the injection tariff as a subsidy for the solar industry

In order to influence public opinion, other positive externalities of solar need to be valued

To justify an increased tariff, a detailed study is needed to determine the true value of distributed generation solar.

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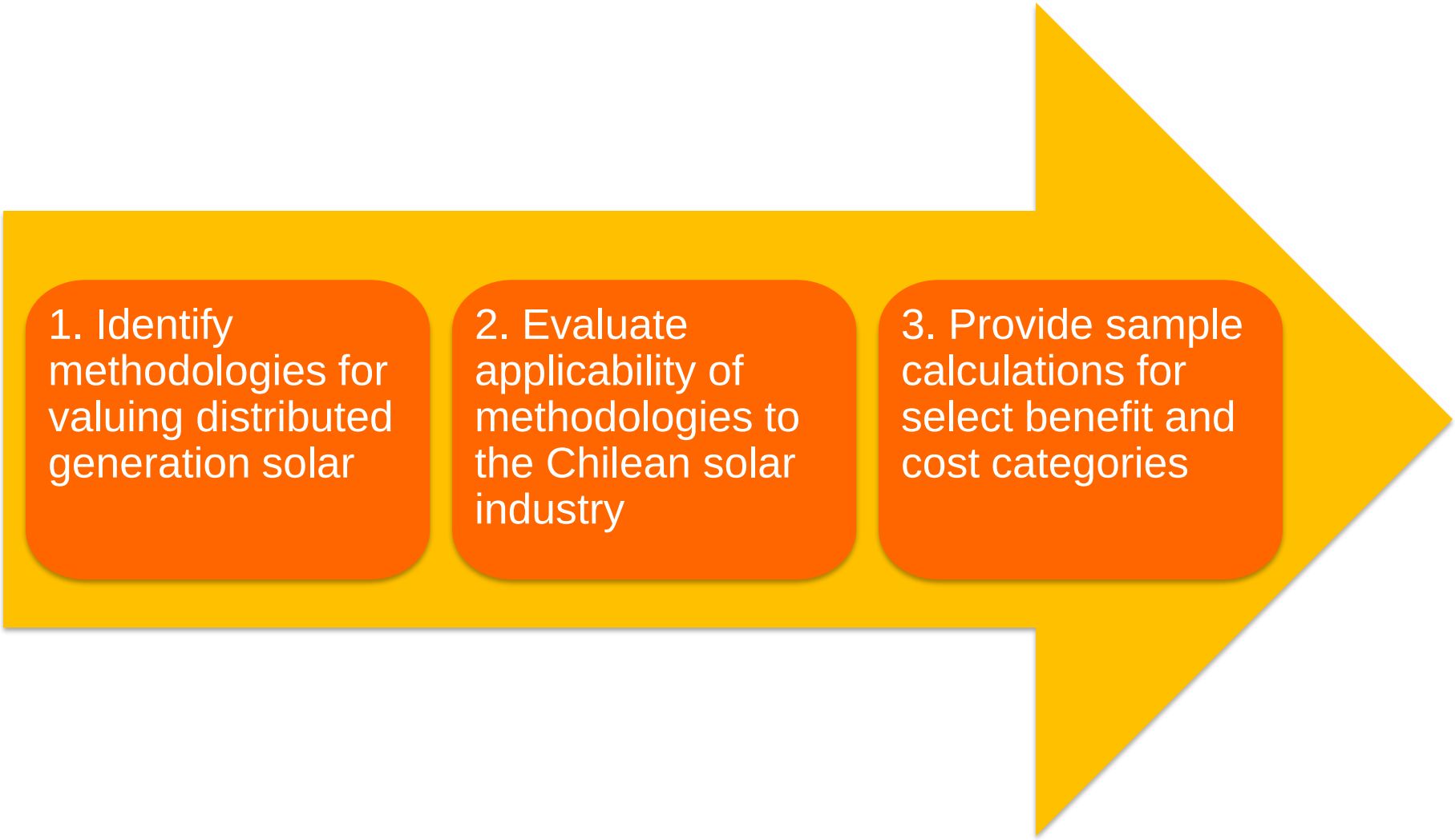
Assessing Costs & Benefits of Residential Solar



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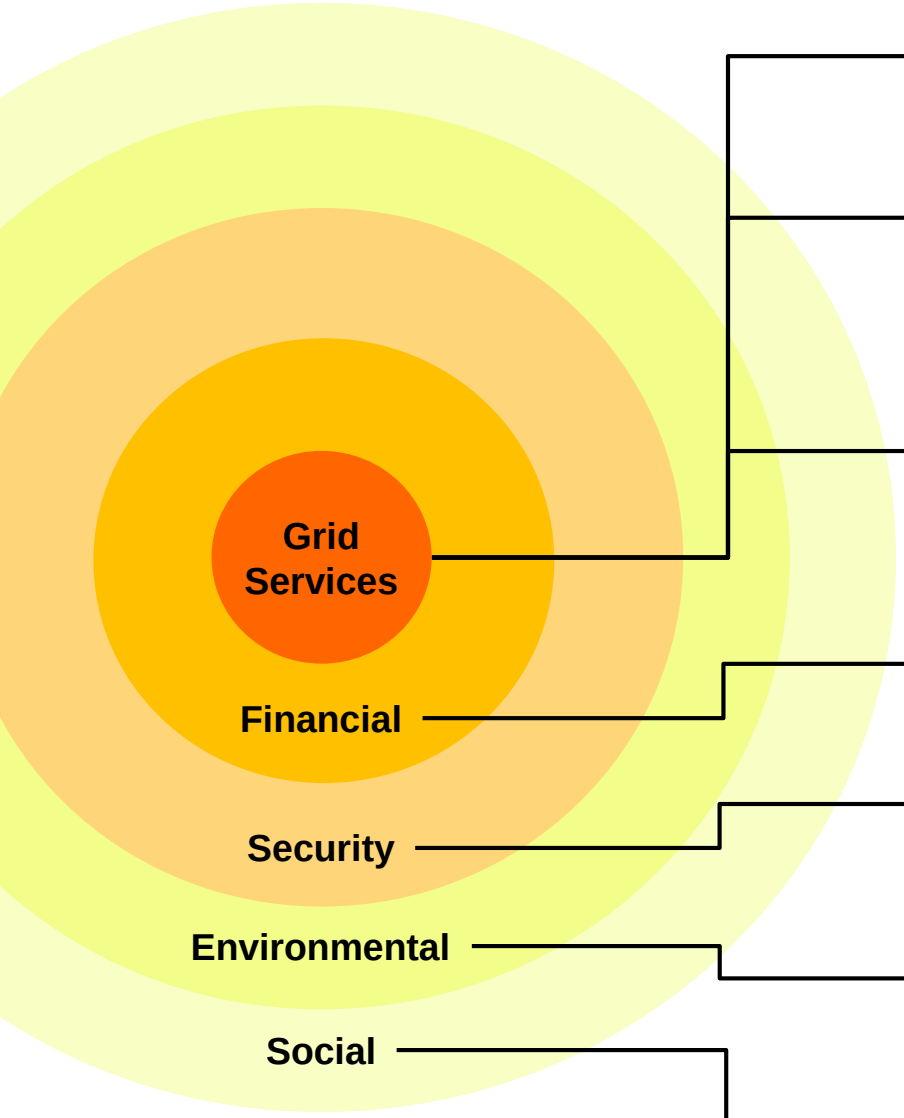
Benefits Categories



Energy
- Energy
- System Losses

Capacity
- Generation Capacity
- Transmission & Distribution Capacity

Grid Support Services
- Reactive Supply & Voltage Control
- Regulation & Frequency Response
- Energy & Generator Imbalance
- Synchronized & Supplemental Operating Reserves
- Scheduling, Forecasting, and System Control & Dispatch

Financial Risk
- Fuel Price Hedge
- Market Price Response

Security Risk
- Reliability & Resilience

Environmental
- Carbon Emissions
- Criteria Air Pollutants (SO2, NO2, PM)
- Water
- Land

Social
- Economic Development (Jobs and Tax Revenues)

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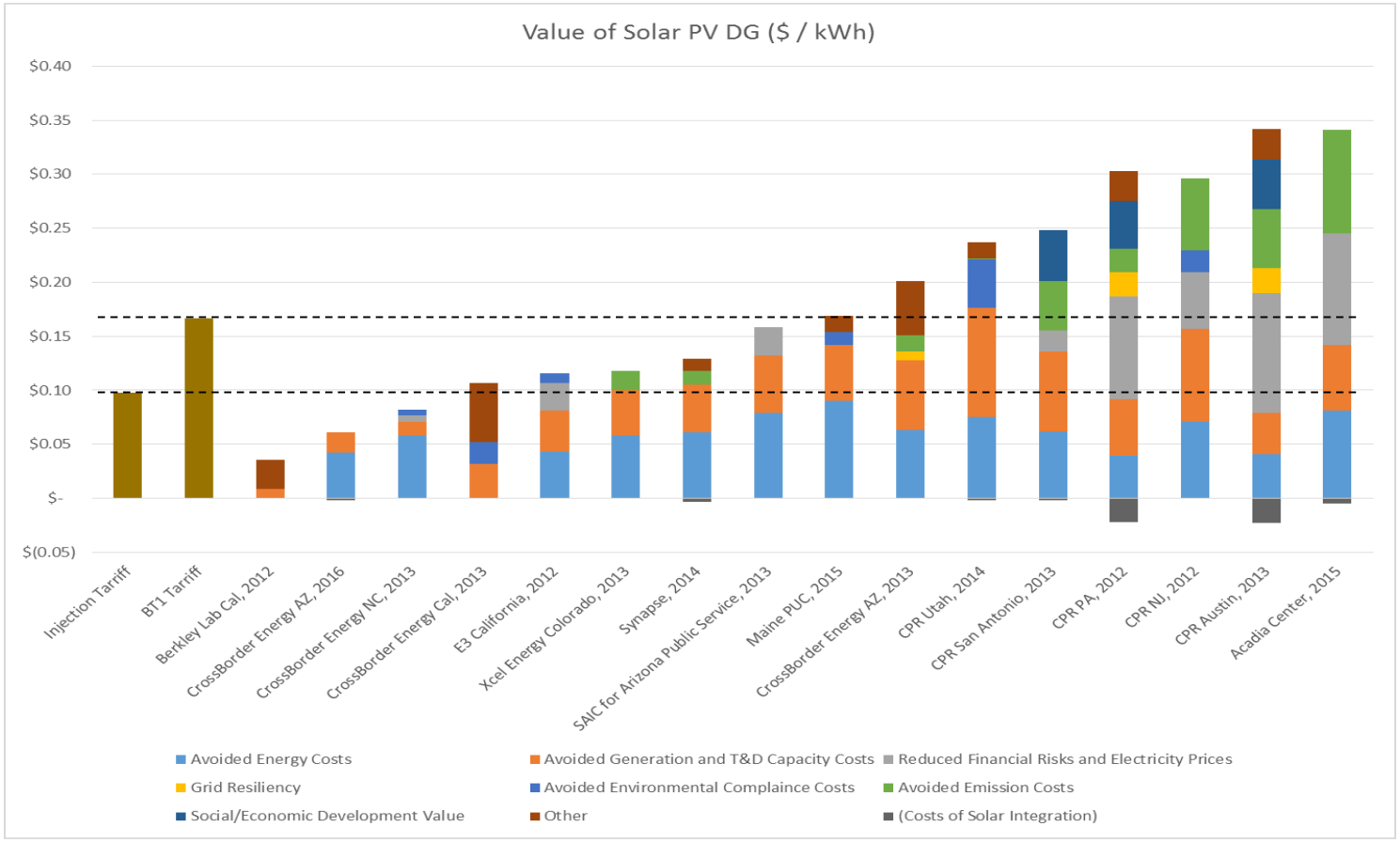
Source: http://www.rmi.org/elab_empower

International Studies of the Value of Distributed Generation

13 out of 16 international studies value solar at a higher amount per kWH than the current Chilean injection tariff and 8 out of 16 studies value solar at a higher amount per kWH than the current BT1 rate.



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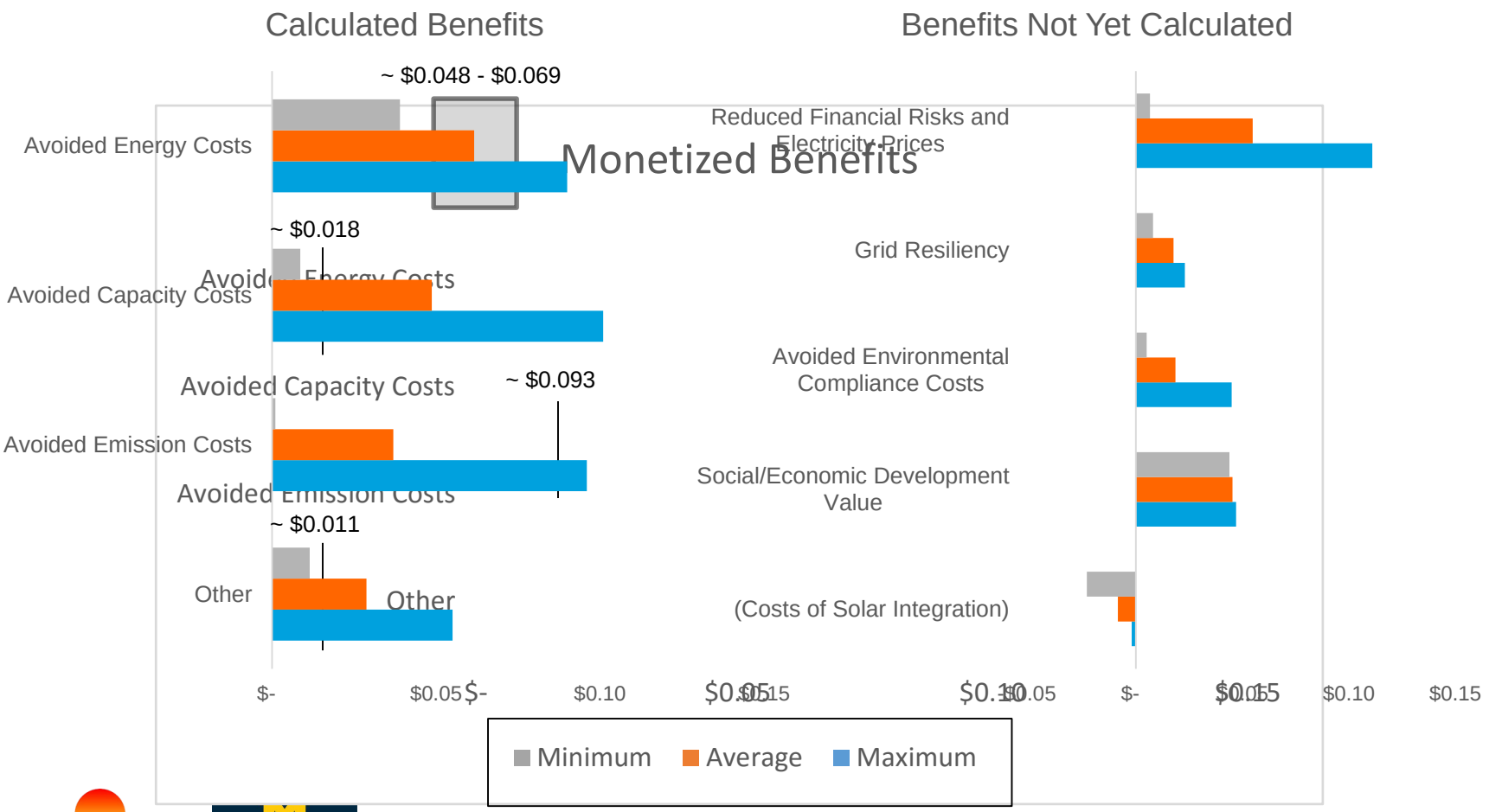
Source: http://www.rmi.org/elab_empower

Value of Distributed Generation by Component

Compared to calculated values from the US, Chilean benefits range from the low to the high end of the spectrum depending on market conditions.



Next Steps to Determine Value of Solar in Chile

- Review and evaluate recommended methodology
- Validate current assumptions for monetized values
- Collect Chile-specific data to calculate non-monetized costs/benefits
- Use the results to inform policy debate regarding support of solar PV DG

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Final Recommendations

Create New Financing Mechanisms	• Encourage the creation of new financing mechanisms	• Educate the financial services industry on solar
Drive Consumer Awareness	• Continue roadshows and develop educational tools to drive awareness	• Realign consumer expectations to the economic realities of solar
Evaluate the Value of Solar on the Grid	• Utilize the methodologies outlined in the report to determine the value of solar	• Gain input from distribution companies and the SEC to validate key inputs
Streamline Enrollment Process	• Simplify the process for small installations (i.e. <10 kW)	• Create an online process to reduce issues related to processing errors

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Residential Solar in Chile

- There are a number of **barriers to the growth** of solar in the Chilean residential sector:
  - **Policy:** Though the political climate in Chile is supportive of solar and has set aggressive renewable energy targets, policies to encourage solar adoption were oriented more towards utility scale projects, not residential.
  - **Market:** Although consumers are in support of energy solutions, they expect **solar to pay for itself** within a very short period of time.
- However, there are a number of levers to help **reduce the barriers for solar panels** in the market:
  - The Chilean government can increase the uptake of solar by **creating viable financing mechanisms**, **marketing** to raise consumer awareness, **properly weighting** the positive externalities of solar, and **streamlining** the enrollment and installation process.

Explore planning, implementation, & evaluation strategies in the Residential Program Solution Center

- Handbooks - explain *why* and *how* to implement specific stages of a residential program.
- Quick Links - provide easy access to resources on the key issues that many programs face.
- Proven Practices posts - include lessons learned, examples, and helpful tips from successful programs.
  - See the latest post on Energy Advisors.

www.energy.gov/rpsc

The Solution Center is continually updated to support residential energy efficiency programs—**member ideas are wanted**!

Cross Cultural Insights

- Cultural context and policy influence attitudes towards energy efficiency and the ways in which efficient technologies are adopted globally.
  - In the UK, **subsidy structures make solar installation an attractive financial option** for people not motivated by climate change.
  - New Zealanders are greatly impacted by living in cold, damp homes. For this reason, many people are **very health focused** when if comes to their homes and energy use is a secondary consideration.
  - Chileans believe **technology should succeed based on its own merit** and **tax incentives are viewed negatively**. Due to this cultural context, government sponsored programs for energy efficient technologies are slow to take off.

Peer Exchange Call Series

We hold one Peer Exchange call the first four Thursdays of each month from 1:00-2:30 pm ET

Calls cover a range of topics, including financing & revenue, data & evaluation, business partners, multifamily housing, and marketing & outreach for all stages of program development and implementation

Upcoming calls:

- August 11: Gold Medal Approaches for Obtaining and Using Energy Efficiency Data (101)
- August 18: Vinicius, Quatchi, and You: Using Power Words and Branding to Increase Interest and Participation (301)
- *No call scheduled for August 25*

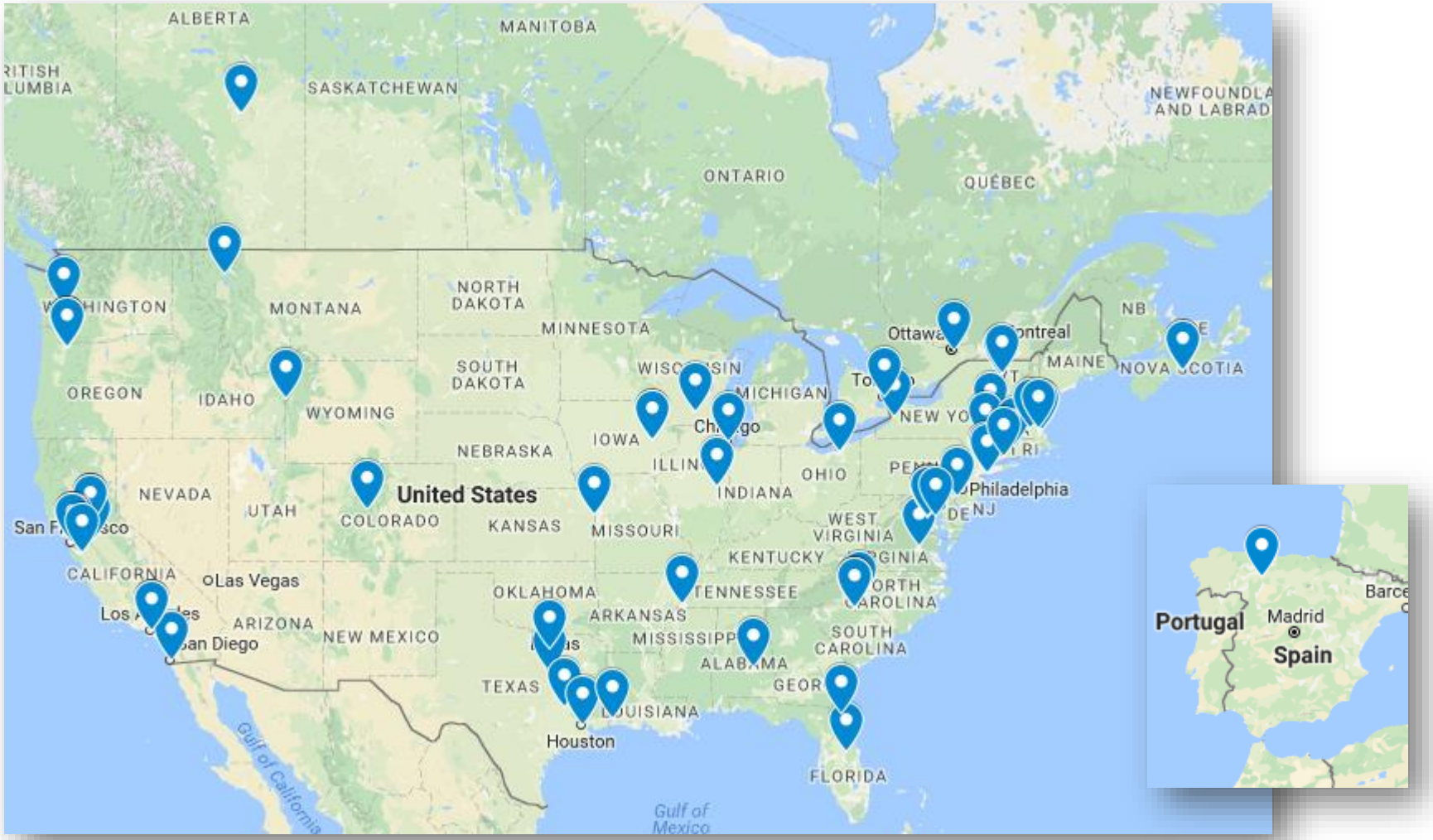
Send call topic ideas to peerexchange@rossstrategic.com

See the Better Buildings Residential Network Program website to register

Addenda: Attendee Information and Poll Results

U.S. DEPARTMENT OF ENERGY

Call Attendee Locations



Call Attendees: Network Members

- California Energy Commission
- Center for Sustainable Energy
- City of Madison
- CLEAResult
- Cleveland Public Power
- Efficiency Nova Scotia
- New York City Energy Efficiency Corporation (NYCEEC)
- New York State Energy Research and Development Authority (NYSERDA)
- Northeast Energy Efficiency Partnerships (NEEP)
- PUSH Buffalo
- Research Into Action, Inc.
- Rural Ulster Preservation Company (RUPCO)
- South Burlington Energy Committee
- Tenderloin Neighborhood Development Corporation
- TRC Energy Services

Call Attendees: Non-Members (1 of 2)

- Alliant Energy Co.
- Ameresco
- AppleBlossom Energy Inc.
- BA Consult
- Bank of Montreal
- BKi
- Building Performance Lab, CUNY
- City of Orlando
- D+R International
- Department of Natural Resources Canada
- Dominion Due Diligence Group
- Eastern Research Group, Inc. (ERG)
- Energy Smart Colorado
- Energy Systems Catapult
- Environmental Change Institute
- Environmental Design / Build
- Environmental Protection Agency
- Erb Institute
- Facility Management Consultores
- Facility Strategies Group
- Flathead Electric Cooperative
- Fraunhofer
- GoodCents
- Greenbanc
- Greenergy
- Hilco Electric Cooperative, Inc.
- Home Office Training & Technology
- ICE/ESU
- ID3A, LLC

Call Attendees: Non-Members (2 of 2)

- JEA
- Jofforts Energy
- JOHNSON A/C
- Lockheed Martin
- Malis Photography
- Massachusetts Department of Energy Resources
- Memphis Light, Gas and Water (MLGW)
- MPower Oregon
- NANA
- North Slope Borough
- Off The Grid Renovations
- Office of the People's Counsel of DC
- Patriot Energy Group
- PG&E
- Resource Efficient Solutions
- Solterre Design
- Texas A&M University
- The Energy Network
- The United Illuminating Company
- Thermostat Recycling Corporation
- Union of Concerned Scientists
- University of Illinois
- University of North Texas
- Woods Bagot
- WSU Energy Program

Opening Poll #1

- Which of the following best describes your organization's experience with international energy efficiency efforts?
  - Some experience/familiarity **– *41%***
  - Limited experience/familiarity **– *38%***
  - Very experienced/familiar **– *18%***
  - No experience/familiarity **– *3%***
  - Not applicable **– *0%***

Closing Poll

- After today's call, what will you do?
  - Seek out additional information on one or more of the ideas **– *72%***
  - Consider implementing one or more of the ideas discussed **– *18%***
  - Make no changes to your current approach **– *9%***
  - Other (please explain) **– *0%***