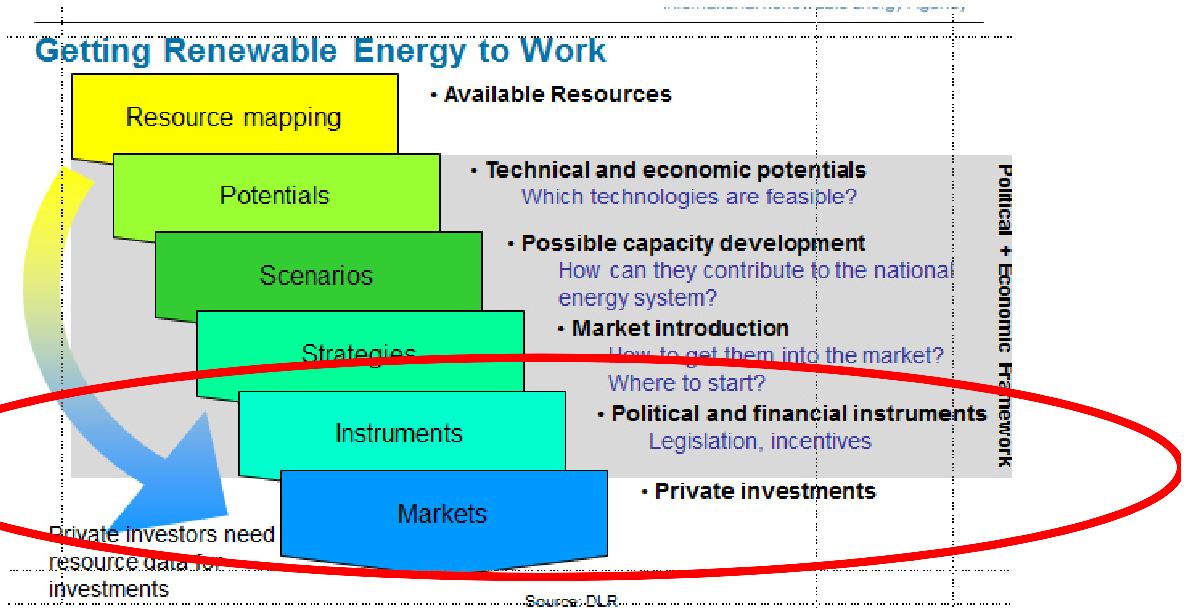
Session 5: From political and financial instruments to renewables market deployment

IRENA Global Atlas
Spatial planning techniques
2-day seminar

Dr. David Jacobs – IET (International Energy Transition)

From scenarios to the actual deployment of renewables



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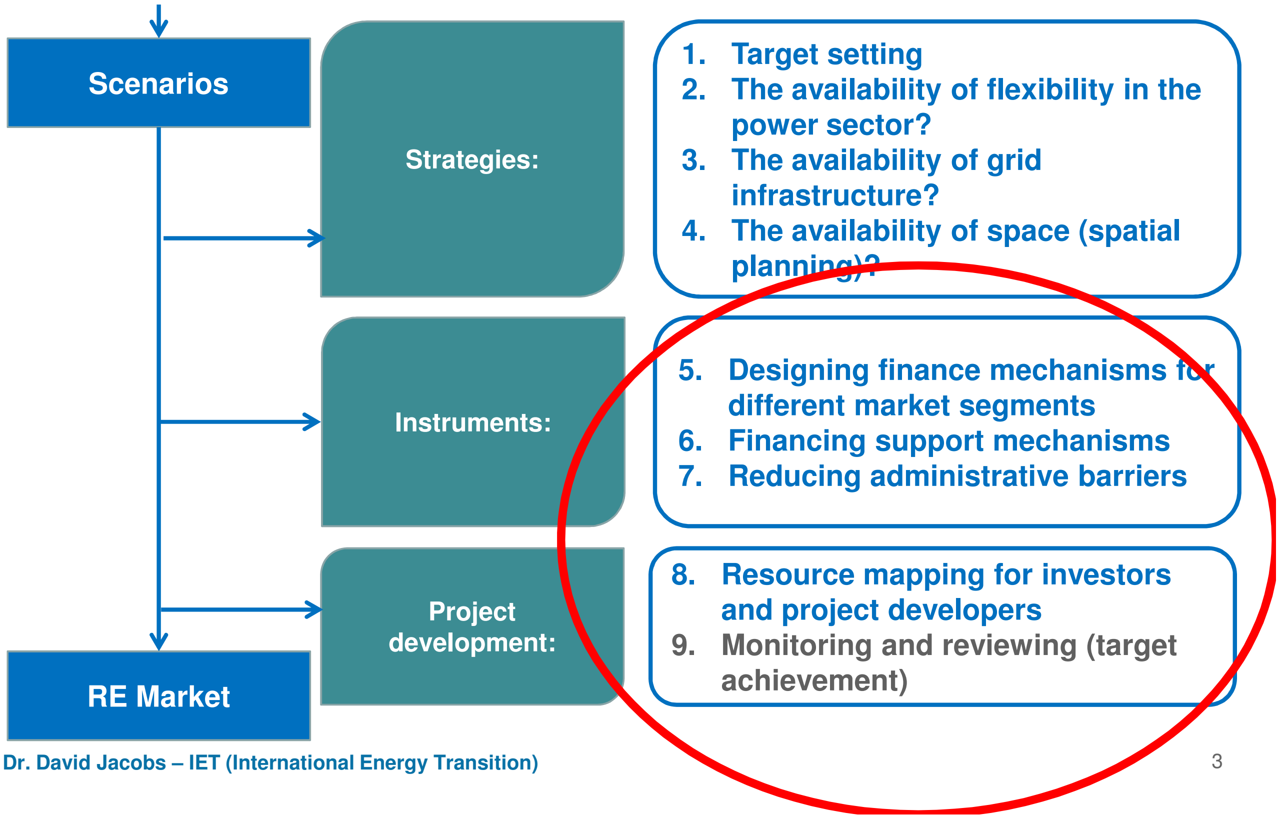

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Establishing political and financial instruments:

5. Designing finance mechanisms for different market segments

Overview of support mechanisms for RES-e

SUPPORT MECHANISMS	Price-based support	Quantity based support
Investment focussed	Investment subsidies Tax incentives	
Generation focused	Feed-in tariffs Net metering Tax incentives	Tender scheme Quota obligation (TGC / RPS)

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Custom taxes

- Are there custom taxes for renewable energy equipment?
- If yes, what is the rational?

Pilot projects

- In emerging RE markets:
  - Have you started with pilot projects in order to make actors familiar with renewables (fluctuations, permitting, grid access, etc.)?

Local content requirement

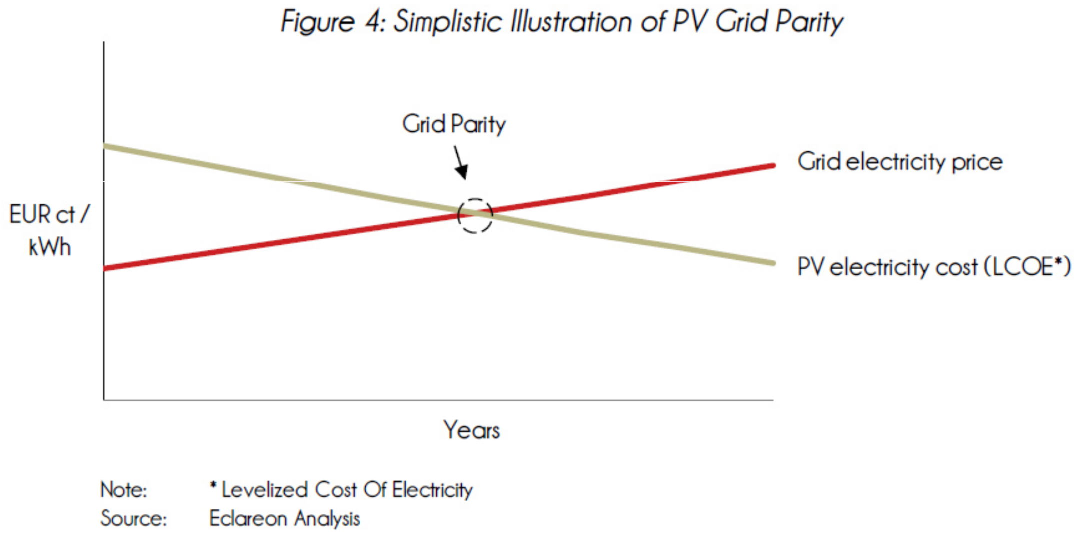
- Several countries have introduced local content requirements in national support mechanisms, i.e. obligations to produce a certain share of renewable energy equipment locally/nationally (e.g. Spain, China, India, Argentina - Chubut, Ontario - Canada, Malaysia, Italy)
- These requirements can be implemented in national feed-in tariff mechanisms
  - Establish a national renewable energy industry
  - Take advantage of positive macro-economic effects
- Problem: potential confliction with international trade rules (WTO)
- Malaysia: Adder for nationally produced equipment:

Source: Mendonca et al. 2009

From scenarios to instruments:

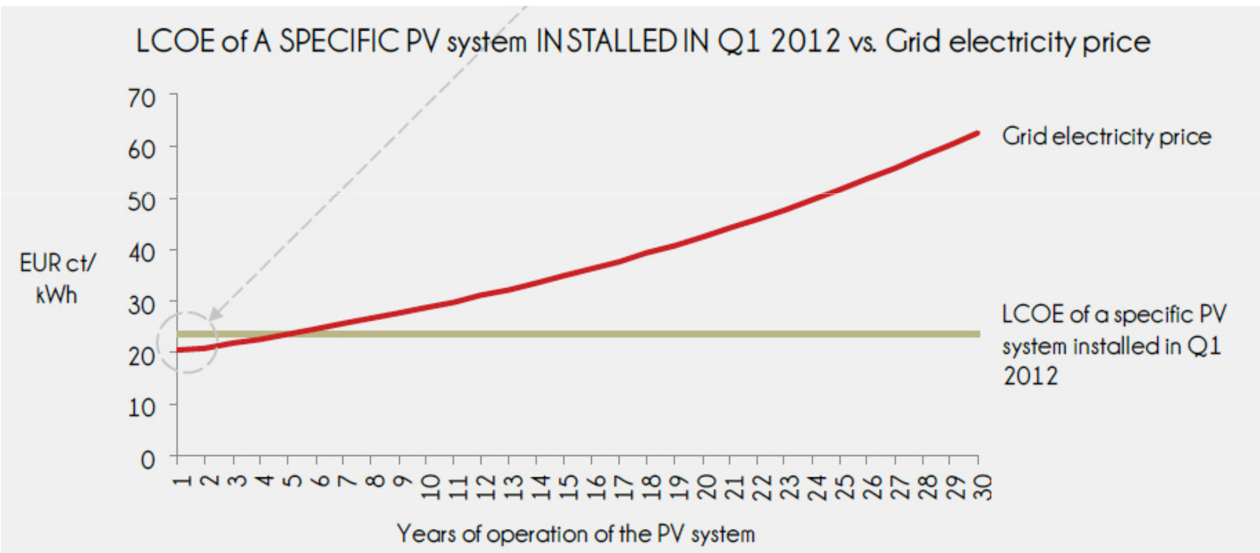
Net Metering policies for small-scale installations?

Simplistic grid parity and "self-consumption"



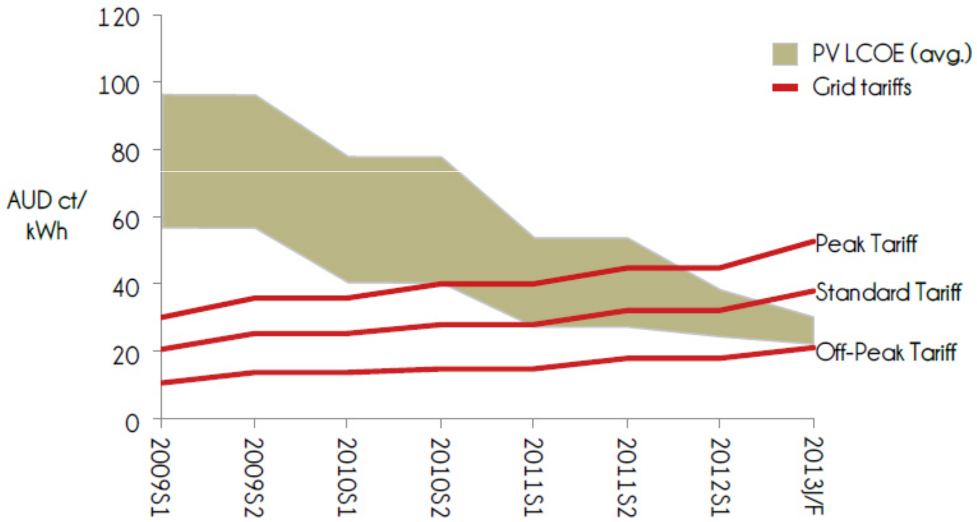
Source: Eclareon 2013

Future development of LCOE and electricity prices



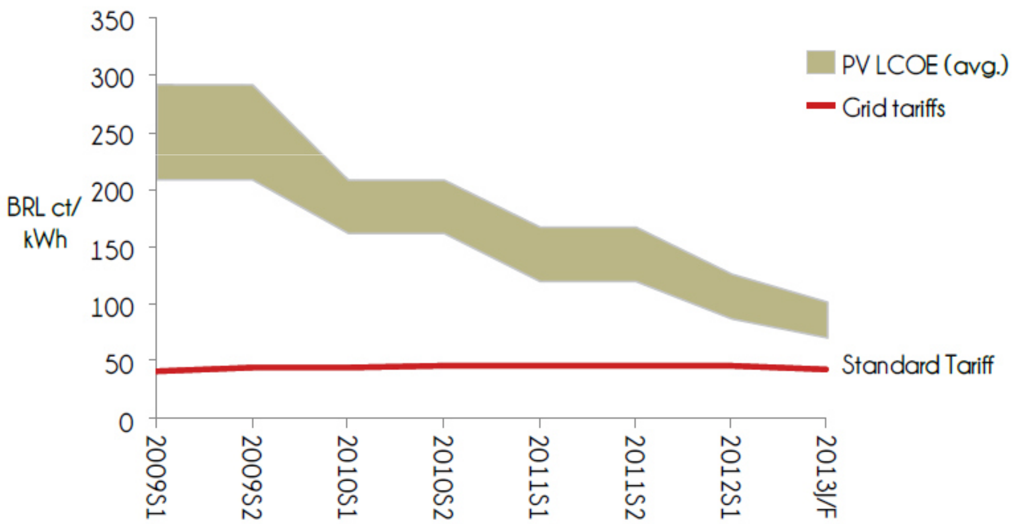
Source: Eclareon 2013

Grid parity in Sydney, Australia (residential)



Source: Eclareon 2013

“Grid parity” in Sao Paulo, Brazil (residential)



Source: Eclareon 2013

Electricity tariff structure and incentives for self-consumption

- Contrary to European countries and the US, electricity prices in developing countries/African countries are generally low for domestic consumers and high for commercial consumers/industry
- Example: Kenya

Tariff	Type of Customer	Supply Voltage (V)	Consumption (kWh/month)	Fixed Charge (KES/month)	Energy Charge (KES/kWh)	Demand Charge (KES/ kVA/ month)
DC	Domestic Consumers	240 or 415	0 – 50	120.00	2.00	-
			51 – 1,500		8.10	
			Over 1,500		18.57	
SC	Small Commercial	240 or 415	Up to 15,000	120.00	8.96	-
CI1	Commercial/ Industrial	415, 3 phase	Over 15,000	800	5.75	600
CI2		11,000		2,500	4.73	400
CI3		33,000 / 40,000		2,900	4.49	200
CI4		66,000		4,200	4.25	170
CI5		132,000		11,000	4.10	170
IT	Interruptible off-peak supplies	240 or 415	Up to 15,000	240	4.85	-
SL	Street Lighting	240	-	120.00	7.50	-

Source: Hille et al. 2011

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Net metering programs world-wide

Europe	Americas	Asia	Middle East	Africa
Belgium	Guatemala	Japan	Jordan	Tunesien
Czech Republic	Canada (regional)	Philippines	Palestine	Cap Verde
Denmark	Mexico	Singapore	Uruguay	
Greece	USA (43 States)	South Korea		
Italy	Peru			
Malta	Dominican Republic			
Switzerland	Panama			
Portugal				
Spain				

Source: REN21 2013

Eligible technologies and sectors

Features	Design Options
Eligible Renewable/ Other Technologies:	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Hydrokinetic, Anaerobic Digestion, Small Hydroelectric, Tidal Energy, Wave Energy, Ocean Thermal
Applicable Sectors:	Applicable Sectors: Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Federal Government, Agricultural, Institutional

Source: Freeing the grid 2011

Eligible costumer classes

Customer Class Eligibility
No eligible class restrictions
Non-residential class permitted to meter up to state capacity limits while residential class limited to no more than 10 kW
Residential class only

Source: Freeing the grid 2011

Obliged utilities

Utilities Covered
Rules apply to all utilities
Rules apply to investor-owned utilities only

Program size

Total Program Limit as Percentage of Peak Demand
5% or greater; no limit
Greater than 2%, but less than 5%
Greater than 1%, but not greater than 2%
Greater than 0.5%, but not greater than 1%
Greater than 0.2%, but not greater than 0.5%
Greater than or equal to 0.1%, but not greater than 0.2%
Less than 0.1%

Source: Freeing the grid 2011

Alternative:

- limitation of total installed capacity in a given region/country

System size

Largest System Allowed to Net Meter
2 MW or greater
Greater than 1 MW, but less than 2 MW
Greater than 500 kW, but not greater than 1 MW
Greater than 100 kW, but not greater than 500 kW
Greater than or equal to 50 kW, but not greater than 100 kW
Less than 50 kW
Only residential systems allowed and capped at less than 20 kW

Source: Freeing the grid 2011

Alternatives:

- Limitation in relation to the average, annual electricity demand in a region/country (e.g. average electricity demand of 300 kWh/a; 1% of 300 kWh = maximum size of 3 kw)
- Local electricity generation may not exceed local electricity demand (household with 300 kWh consumption may not produce/net meter more than 300 kWh of generation).

Roll-over provisions for excess electricity

Rollover Provisions
Indefinite rollover at retail rate.
Monthly rollover at retail rate for one year, annual payment at retail rate
Monthly rollover at retail rate for one year, annual payment at wholesale rate or avoided cost
Monthly rollover at retail rate for one year, excess energy donated to utility annually
Monthly payment at wholesale rate or avoided cost
No rollover permitted, excess energy donated to utility monthly

The value of "rolled-over" electricity (credit value):

- retail price
- wholesale price
- combinations

Source: Freeing the grid 2011

Meter provisions

Metering Provisions
No meter change required—customer-sited generator uses existing meter
New meter is provided by the utility at no cost to the customer-sited generator
Dual meters or dual registers—utility pays for the additional meter
Dual meters or dual registers—customer pays for the additional meter

Source: Freeing the grid 2011

Auto consumptions and the “solidarity”-based electricity system

- Are there major exemptions/privileges for electricity auto-consumption in your country?
  - Grid usage fees?
  - Other taxes or levies?

- If industry subsidizes household electricity prices in Africa countries, do you want them to auto-produce/consume electricity (and no longer pay the higher industrial/commercial rate?

Investment (in)security in the case of net metering

- Changes in Net Metering regulations will effect new power plants AND existing power plants

- Changes in electricity pricing (moving from monopolised markets to liberalized markets in the coming 20 years?)

- Changes in electricity rate structure (costumer classes)

From scenarios to instruments:

FIT design and locational signals

Basic feed-in tariff design

- Purchase obligation
  - "Independent" from power demand
- Fixed tariff payment based on the actual power generation costs
  - Price setting will be discussed later
- Long duration of tariff payment

Important FIT design features

- Payment duration
- Eligibility
- Technology-specific tariffs
- Feed-in tariff calculation
- FIT degression
- Capacity caps

Tariff calculation methodology

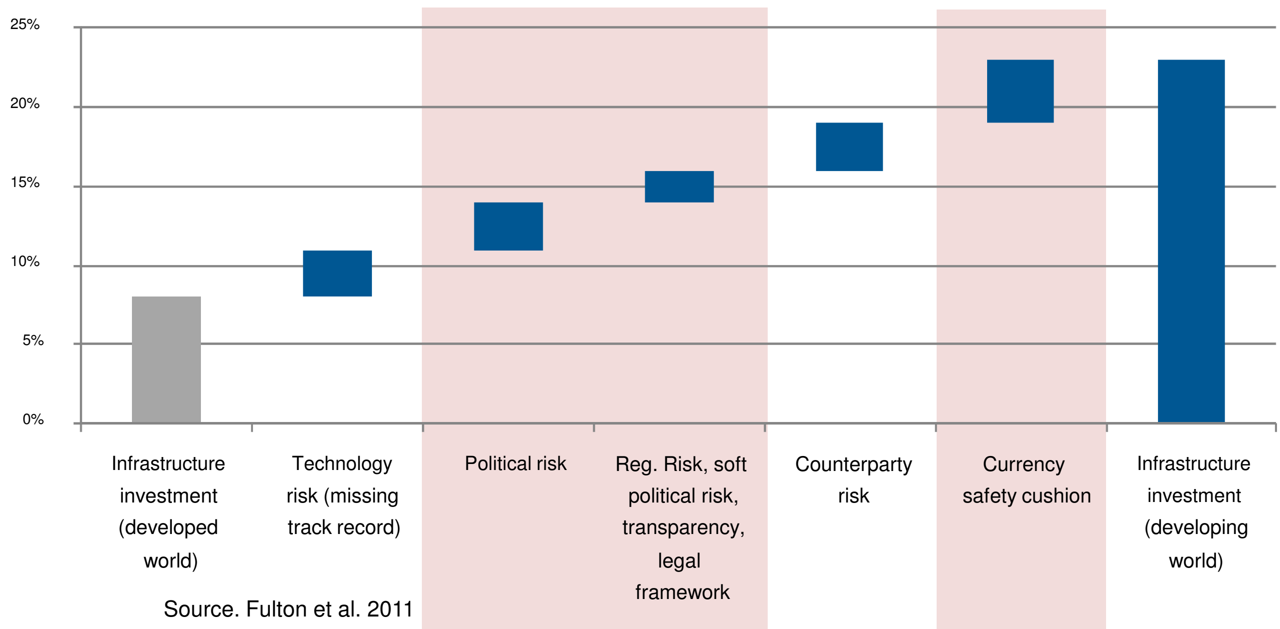
- Tariff calculation based on technology specific generation costs + "reasonable" rates of return
- Don't use "avoided costs" as point of reference
- Cost factors:
  - Investment costs (material and capital costs); Grid-related and administrative costs (including grid connection, costs for licensing procedure; Operation and maintenance costs; Fuels costs (biomass and biogas)

Tariff calculation methodology

- Targeted IRR (Internal rate of return)
  - In the EU, feed-in tariffs target at an internal rate of return of 5-9 percent (certain jurisdictions use return on equity)
  - In developing countries, the targeted IRR usually needs to be higher (10-20 percent)
  - Public investment (monopolist, often without profit interest); or private IPPs (profitability important)?
  - Similar profitability for renewable energy projects needed as for convention energy market

Figure 4: Equity IRR expectation in developing countries:

Equity IRR expectation in developing countries



Source. Fulton et al. 2011

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Locational signals for new power generation - Location-specific tariff payment

- Mostly applied for wind energy (Germany and France)
- Reduce accumulation of wind power plants in coastal areas (increases public acceptance); visual impact; grid integration
- Location specific tariffs in Germany depend on wind speed at a given location (measured during the first 10 years of operation)
- First 10 years: flat rate
- Final 5 years: depending on “quality” of site

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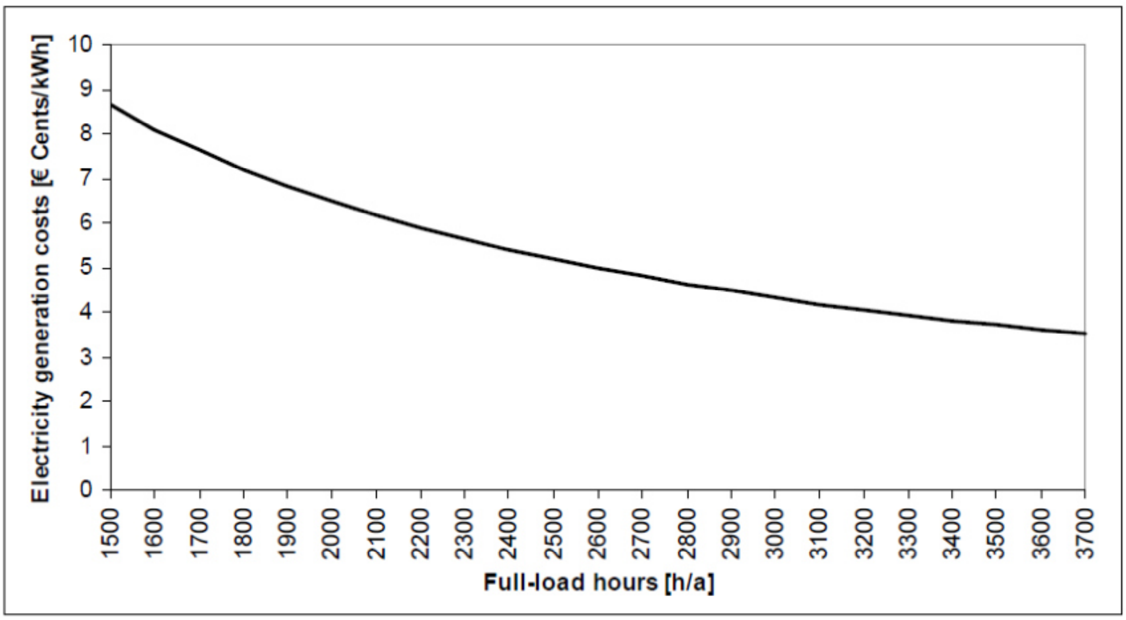
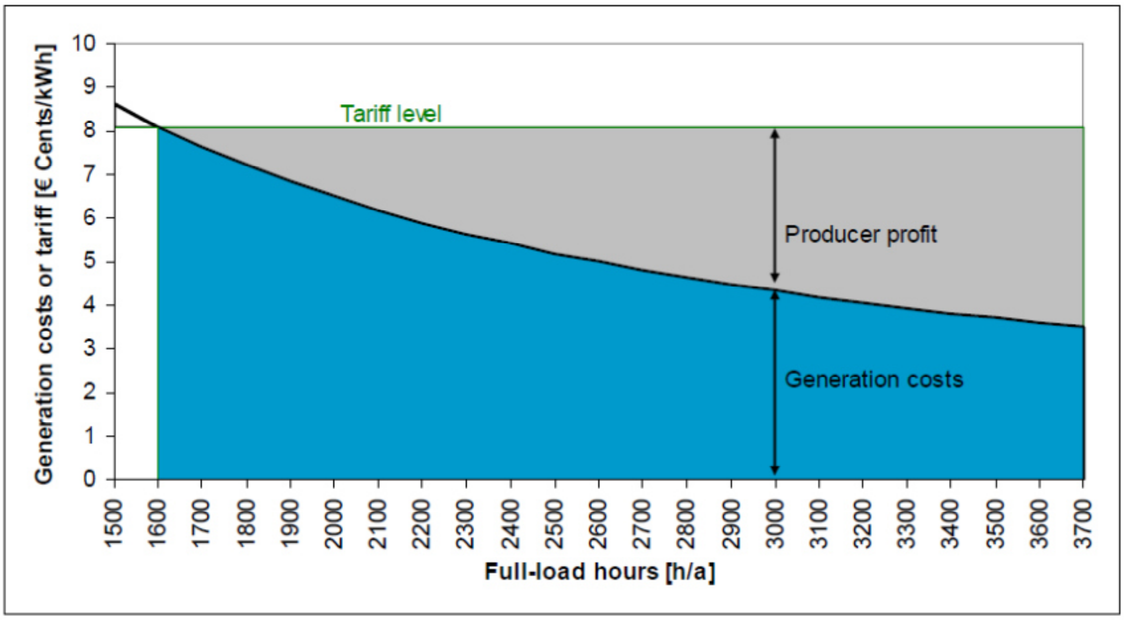
Location specific tariffs - Germany



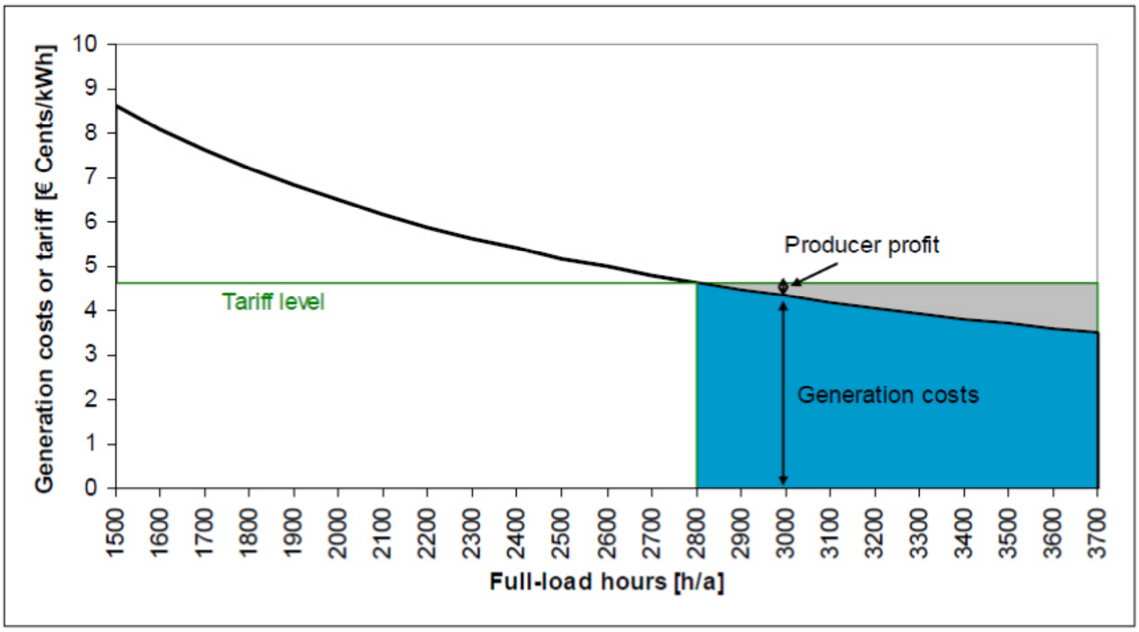
Source: Klein et al. 2008

Location specific tariffs - Germany



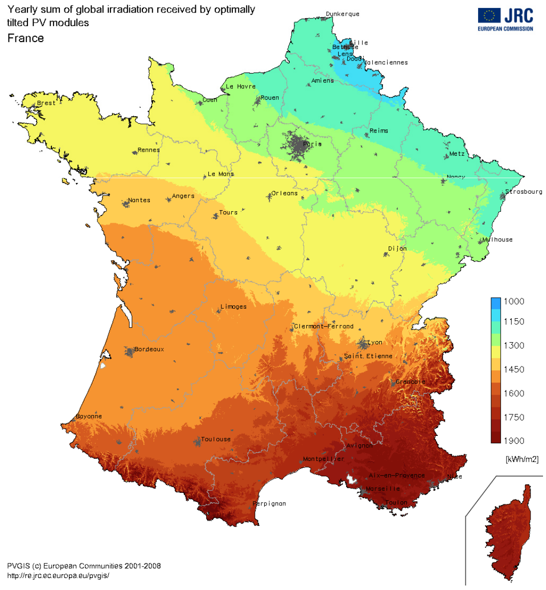
Source: Klein et al. 2008

Location specific tariffs - Germany



Location specific tariffs

- French FIT for solar also includes location specific tariffs



DÉPARTEMENT	NUMÉRO DE DÉPARTEMENT	RÉGION	COEFFICIENT R
Allier	3	Auvergne	1,09
Alpes-de-Haute-Provence	4	Provence-Alpes-Côte d'Azur	1,00
Hautes-Alpes	5	Provence-Alpes-Côte d'Azur	1,00
Alpes-Maritimes	6	Provence-Alpes-Côte d'Azur	1,00
Ardèche	7	Rhône-Alpes	1,03
Ardennes	8	Champagne-Ardenne	1,16
Ariège	9	Midi-Pyrénées	1,05
Aube	10	Champagne-Ardenne	1,13

Source:
http://re.jrc.ec.europa.eu/pvgis/countries/europe.htm

Additional measures for locational incentives

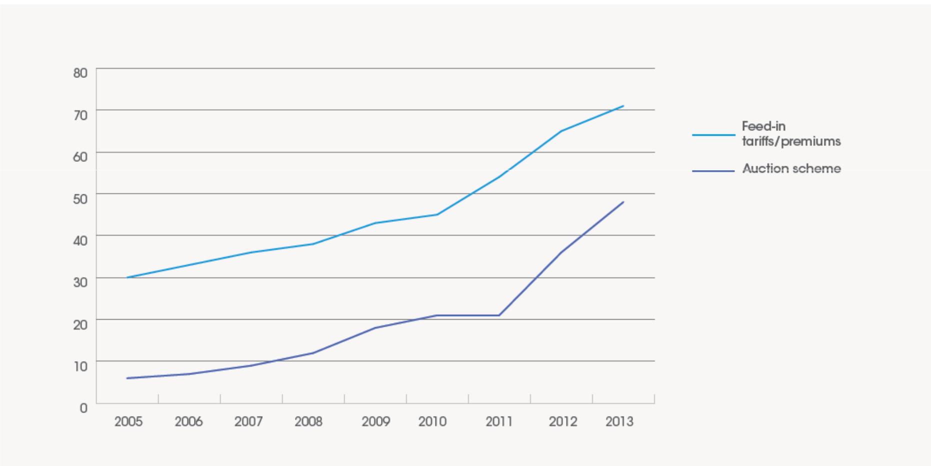
- Nodal pricing
- Using differentiated grid-usage fees
- Define areas with good, medium and no grid connection capability

From scenarios to instruments:

Auction design and spatial planning

Increasing use of auctions in emerging markets

FIGURE 1 TRENDS IN NUMBER OF COUNTRIES ADOPTING AUCTION SCHEMES AND OTHER TARIFF-BASED MECHANISMS (2005 –2013)



Source: REN21, 2005; REN21, 2007; REN21, 2010; REN21, 2011; REN21, 2012; REN21, 2013.
Notes: Figures for the years 2006, 2008 and 2009 are based on estimations.

Source: IRENA 2013

Tender/auctioning mechanism

- Government issues call for tender
  - Generally: bids for cost per unit of electricity (generation focused)
  - Sometimes: bids for upfront investment cost of one project (investment focused)
  - For example: 100 MW wind energy onshore
  - Bidder with the lowest price “wins” contract and has the exclusive right for renewable electricity generation

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Auctions design: How to determine prices?

- Basic price finding mechanism:
  - **English (or Ascending)**
    - Price for item is increased until only one bidder if left and the item is sold to that bidder
  - **Dutch (or Descending clock)**

    Multi-round bid
    - Auctioner starts with a high price and then calls out successively lower prices until quantity offered and quantity required match!

Source: http://en.wikipedia.org/wiki/Dutch_auction

Auctions design: How to determine prices?

- Sealed-bid auction
  - Each bidder writes down a single bid which is not disclosed to other bidders and the most competitive bidders win ("pay as bid").
- **Other selection criteria than the price?**
  - **Local content**
  - **job creation**
  - **ownership**
  - **socioeconomic development**
  - **Resource securitization in the case of biomass**
  - **Locational incentives**

Auction design: Who can participate? (Prequalification)

- Prequalification requirements for auctions – important for project realization rate!
  - Material pre-qualifications
    - Project development experience
    - Securitization of land, grid access
    - Contracts for equipment
    - Etc.
  - Financial prequalification
    - Bid bonds
    - Etc.

Auction design and site determination

- Option 1: Allow project developers to freely select sites (within the existing spatial planning arrangement)
- Option 2: Package pre-selected sites in order to have better control over land use (and help to shorten bidding process).

Auction design: Other important design decisions

- **Which authority should be in charge of procurement?**
- **Technology neutral versus technology-specific auctions?**
- **How often will procurement take place (frequency)?**
- **Size of each procurement round? Technology-specific?**
- **Upper or lower limit on project size?**
- **Upper or lower limit on prices?**

Pros and cons of auction mechanisms

Advantages	Disadvantages
Cost efficiency and price competition in emerging markets	High administrative costs (complexity)
High investor security (PPA)	Discontinuous market development (stop-and-go cycles)
Volume and budget control	risks of not winning project increases finance costs
Predictability of RE-based electricity supply (sector growth)	Risk of underbidding (lack of deployment and target achievement)
Combination with local content, etc.	

Experience from emerging markets:

Case study South Africa

South Africa: Moving from FITs to auctions

- In 2009, the government began exploring feed-in tariffs (FITs)
- later rejected in favor of competitive tenders:
  - Insecurity about "right tariff levels" (2009, 2011)
  - FITs prohibited by the government's public finance and procurement regulations?

	REFIT (ZAR / kWh)		REIPPPP (ZAR/kWh)	
Technology	2009 Tariff	2011 Tariff	Bid Cap	Round 1
Wind	1.25	0.94	1.15	1.14
Photovoltaic	3.94	2.31	2.85	2.76
Concentrated solar trough with storage	3.14	1.84	2.85	2.69

Source: Eberhard et al. 2014

South Africa: First bidding round in 2011

- Auction design and results:
  - Department of Energy in charge of auction (not Eskom!)
  - Strict pre-qualification (EIA; resource measurement)
    - Bids needed to be fully underwritten with debt and equity (avoid under-bidding)
  - Selection of 28 projects with 1416 MW (investment of US$6 billion)

- Reasons for high prices:
  - Most bids close to the maximum price (previously calculated FITs) - Lack of competition
  - significant upfront administrative requirements
  - high bid costs

Source: Eberhard et al. 2014

South Africa: Second and third round in 2011 and 2013

- Second round in November 2011
  - Tighter procurement process and increase competition
  - Seventy-nine bids for 3233 MW – 19 projects selected

- Third round started in May 2013
  - 93 bids for 6023 MW – 73 projects with 1456 MW selected
  - Prices fell further in round three
  - Increased local content
  - wide variety of domestic and international project developers, sponsors and equity shareholders

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South Africa: Successful auctions?

- **Decline of submitted bids over time:**

Table 3: REIPPPP Average Bid Prices, 2011 values (SAc/kW)

	Round 1	Round 2	Round 3
Wind	114.3	89.7	65.6
Reduction from previous round		-21.5%	-26.9%
Total reduction from round 1			-42.6%
Solar PV	275.8	164.5	88.1
Reduction from previous round		-40.4%	-46.4%
Total reduction from round 1			-68.1%

- **Lack of competition in the 1st round – right benchmark?**
- **General cost decline of PV and wind in the past 3 years!**
- **How many projects will eventually be realized?**

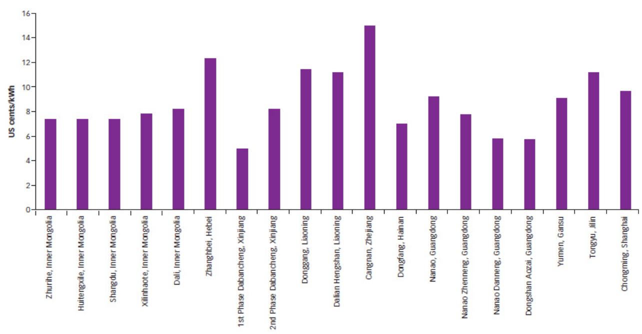
Experience from emerging markets:

Case study China

China: Moving from auctions to FITs

- Policy framework:
  - 2005 Renewable Energy Law – clear roadmap and targets (15 percent of primary energy supply by 2020)
  - Initially passed to support FITs but no consensus of tariff level based on experience with previous concession loans

Figure 1. Mean electricity prices for wind power generation projects operational at the end of 2006 (before the auctioning of concessions)



Source: Junfeng, Pengfei, and Hu 2010.

https://openknowledge.worldbank.org/handle/10986/18676

China: Auction design features and effects

- Policy framework:
  - First auction for onshore wind started in 2003
  - Sealed bid, single round determined prices
  - Early auction rounds: bids below cost of production – projects were not completed
    - Loose prequalification requirements
    - Large state-owned enterprises wanted to enter the market and could cross subsidize their low bids with coal-generation business
- Effects:
  - slow expansion of wind power sector
  - insecurity for investors

China: Auction design adjustments

- Adjustment of auction design:
  - Minimum price
  - Stricter pre-qualifications
  - Local content requirement
- Further adjustment in 2007:
  - Winner was no longer the lowest price but the bidder that was closest to the average price resulting from all bids, after excluding the highest and lowest bids
- Further adjustment:
  - Move back to "lowest bid" design

China: Successful auctions?

- China used auction round as a price-discovery mechanism for FIT program (attract international investors)
- 2009: Establishment of location-differentiated feed-in tariffs for wind energy
- 2011: FITs for solar PV
- 2014: Offshore wind tariffs
- Emerging technologies such as CSP and offshore wind energy continue to use bidding for contracts

Experience from emerging markets:

Combining FITs and auctions?

Auctions or FITs: No easy answer…

- Do you have experience in setting prices administratively?
- Is there sufficient interest in investing in renewables in your country (competition in Least Developed Countries)?
- Is the market big enough to create competition (size of auction)?
- Which type of actors should invest (small vs. big)?

Auctions and FITs?

- Use auctions to determine FIT prices (China)?
- Use auctions for emerging technologies and FITs for mature technologies (Denmark, China)?
- Use auctions for large projects and FITs for small projects (France, Taiwan)?

From scenarios to instruments:

Options for mini-grid finance

Technical considerations – Electricity in remote areas

Technological Option	Advantages	Shortcomings
Microgrids including RE / hybrid power plant (small systems)	• Improved quality (surge power, load shedding, etc) • Lower investment for compact communities • Distributed generation (generation is made in the consumption point) • Diesel genset backup can provide power supply reliability even during unfavourable weather conditions • Lower LCOE than diesel generation alone	• Higher technological and organizational complexity • Social rules required to distribute energy availability • Local management required • Need for storage systems

Source: Remote 2012

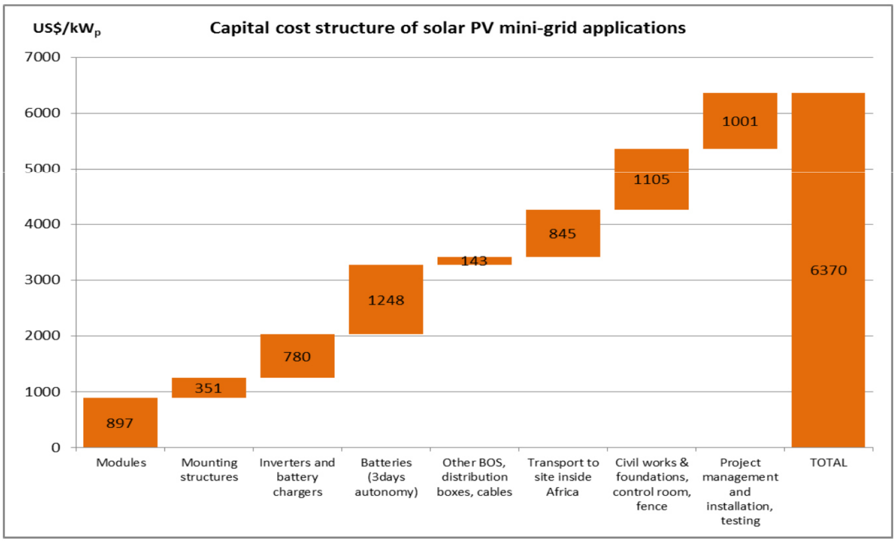
Technical considerations – Electricity in remote areas

Technological Option	Advantages	Shortcomings
Hybrid integration of RETs (large systems)	• Leverages strengths of renewables and reliability of diesel generation • Lower LCOE than diesel generation alone	• Higher technological and organizational complexity • Grid stability requires additional equipment to manage intermittency of some RES • Challenges increase as RET penetration increases – storage may be required
Fossil-fuel generation	• Low initial investment costs • Many areas already have technical experience with these systems (maintains the status quo)	• High O&M costs • High uncertainty due fossil fuel price volatility • GHG emissions, noise and pollution • Ongoing logistic and environmental risks from transporting diesel

Source: Remote 2012

Capital cost structure for mini-grids applications

- **Capital cost compilation of off-grid PV systems ir rural Africa. Costs are based on a 30 kWp generating capacity with 3 days of battery autonomy**



Source: Ruud 2013

Tariff structure in mini-grids

- Energy-based tariffs (e.g. 0.28 EUR/kWh)
- Power-based tariffs (e.g. 5 € per month)
- Fee-for service tariffs (e.g. 0.68 EUR per hour per person)
- pre-paid or post-paid tariffs

Source: REN21 2014

Mini-grid finance: profile of capital providers

	Grants	Equity			Debt	
	Subsidies / TA	Seed / Start-up	Growth / Expansion	Infrastructure	SME / Corporate	Project Finance
Sources	▸ Govern-ments ▸ Foundations ▸ Donors / DFIs	▸ Friends & Family ▸ Angel inves-tors ▸ Impact funds ▸ Foundations	▸ Impact funds ▸ Venture cap funds ▸ PE funds	▸ PE funds, most DFI-spon-sored	▸ Local banks ▸ Int'l banks w/ local presence	▸ Commercial banks ▸ EXIM banks ▸ DFIs
Typical return expectations	None (in some cases return of capital)	Impact: 5 – 35% Commercial: 30%+	Impact: 5 – 20%+ Commercial: 20%+	15 – 25%	16 – 24% (local currency)	6 – 12% (hard currency)

Source: Mini-grid Policy Toolkit, 2014, Download from http://www.ren21.net/

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6. Financing support mechanisms:

Design options and international experience

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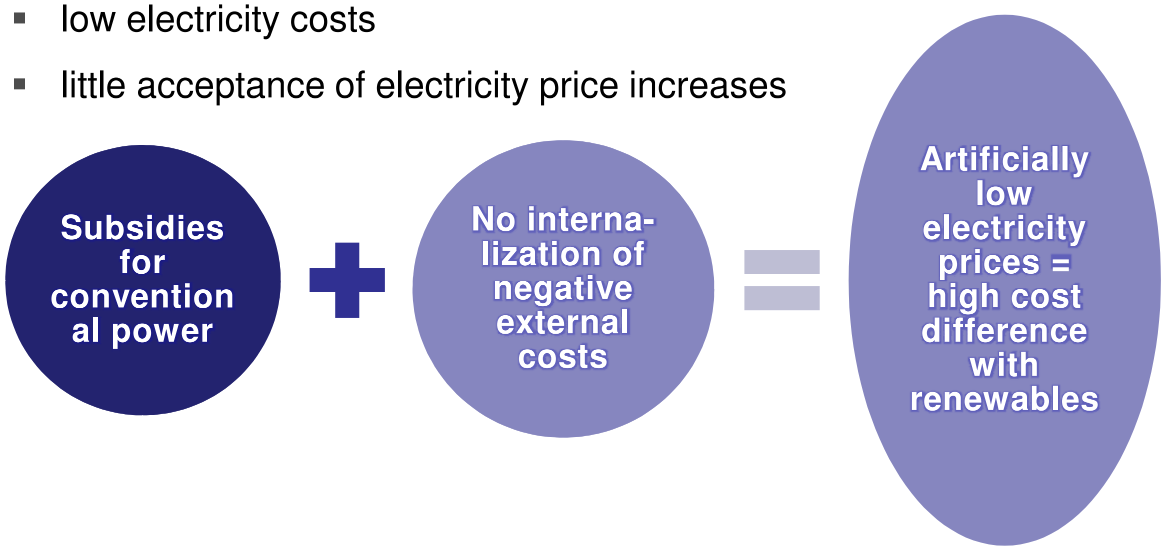
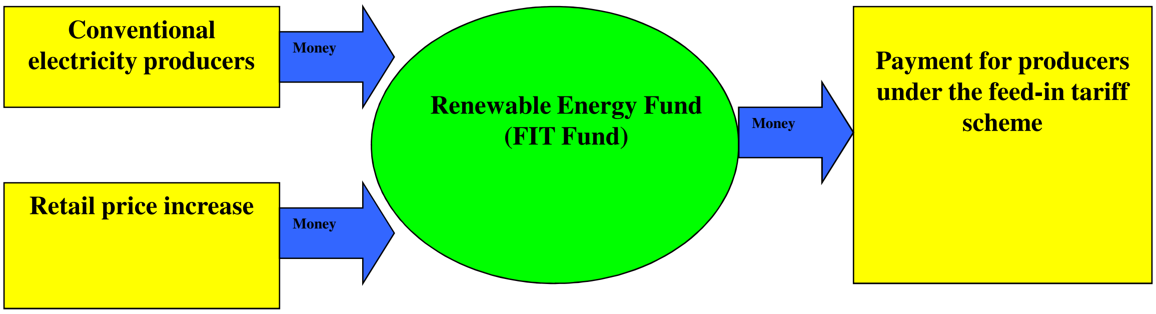
Financing support programs in developing countries

- low electricity costs
- little acceptance of electricity price increases



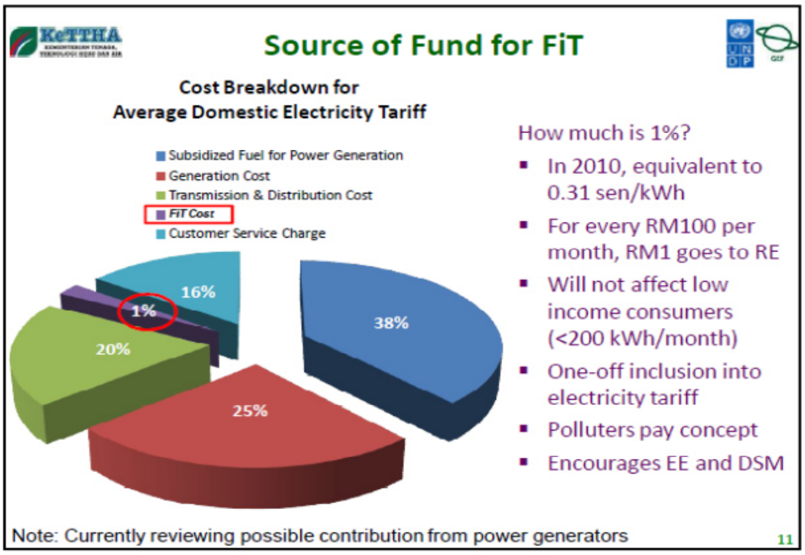
Combined financing – Taiwan

- Add additional financing to the national RES fund (levy on producers from conventional electricity)
- Increase the retail electricity price by a certain share (after general elections next year)



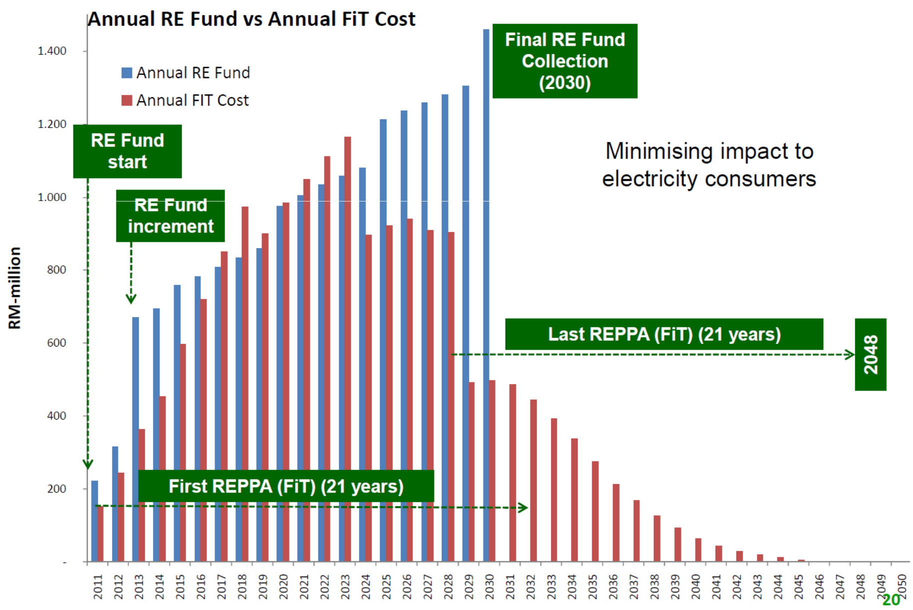
Source: David Jacobs

RES financing in Malaysia – limited electricity price increase (limited scope of FIT program)

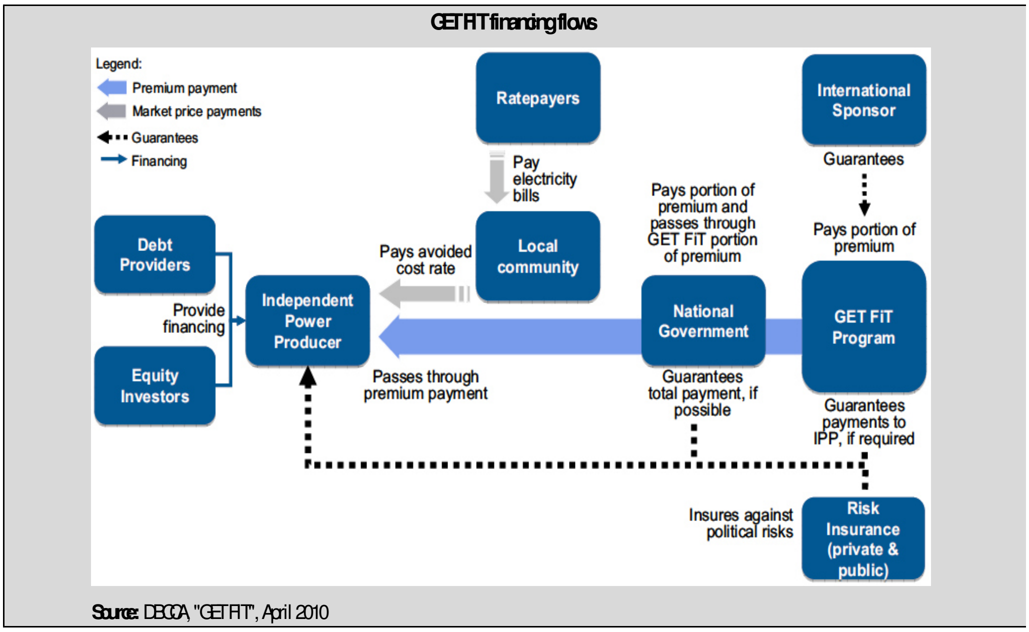


Source: Kettha 2010

RES Fund in Malaysia



International RES financing? – The future of international climate talks?

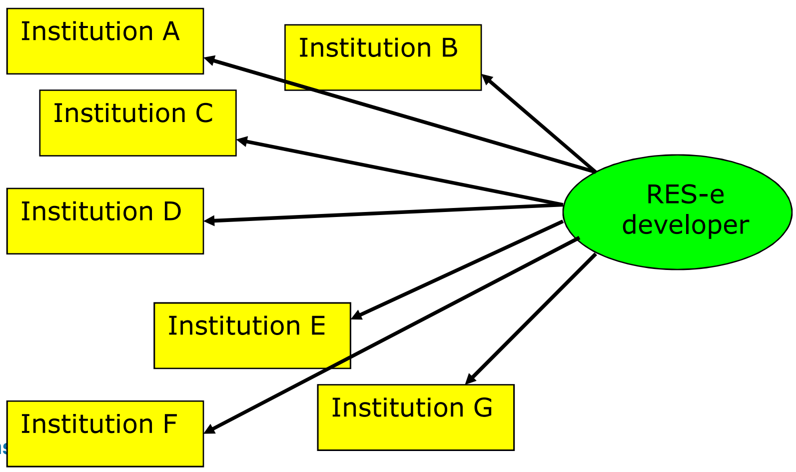


From scenarios to instruments:

7. Reducing administrative barriers

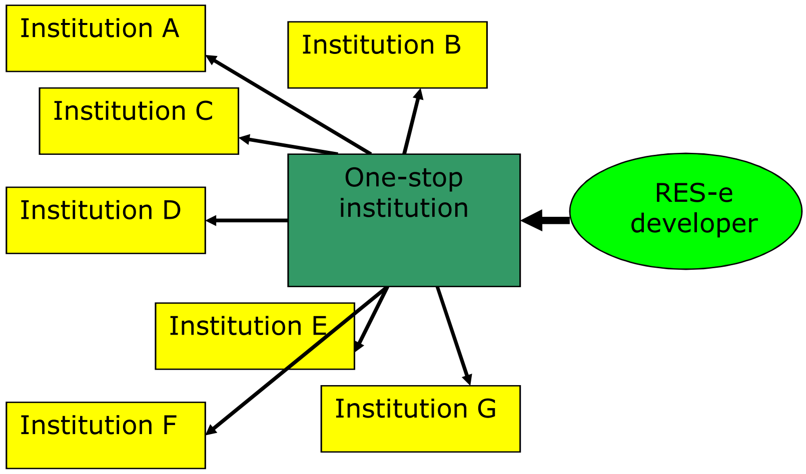
High number of institutions involved in planning and permitting process

- Lengthy and complicated application process
- High number of rejections
- High administrative costs



High number of institutions involved in planning and permitting process

- Solution: One-stop-shop institution



Long lead times

- Long lead times to obtain necessary permits
- Spain and Portugal: 12 year for small hydro
- France: 5 years for wind energy
- Approval rates (France - wind energy) = less than 30%

Long lead times

- Exact length of procedure not known up-front: clear guidelines and obligatory response periods for authorities needed
- Clear attribution of responsibilities
- Especially spatial planning related permits can take many years (wind, biomass)

From instruments to market deployment:

8. The importance of resource mapping for investors and project developers

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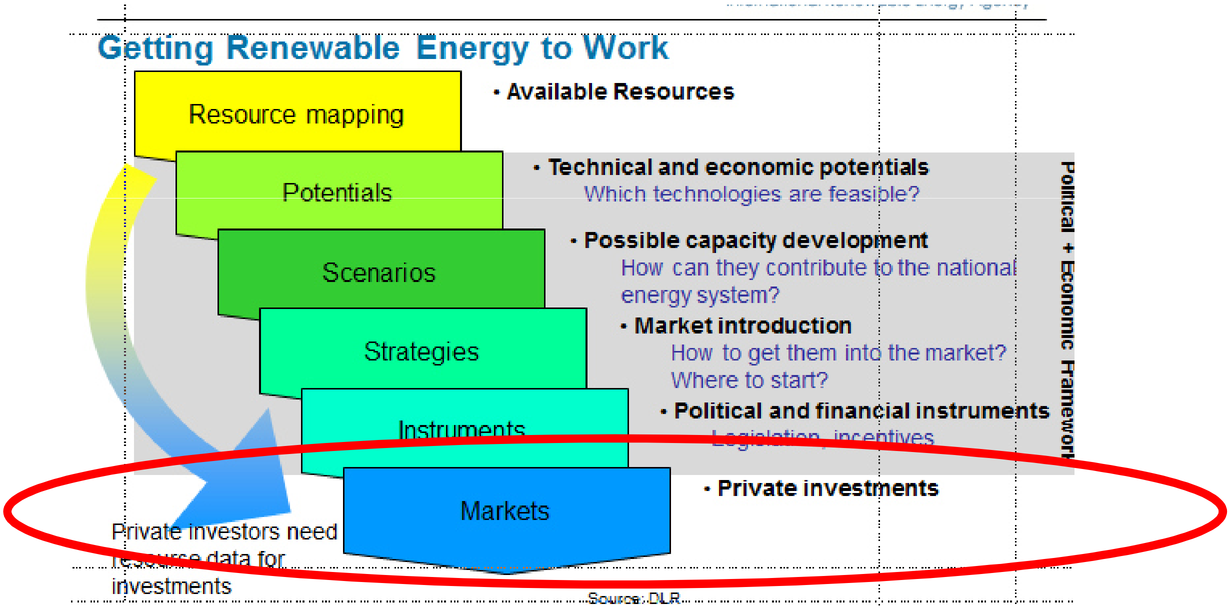
From resource mapping to the actual deployment of renewables



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Resource mapping and project development

- Purpose of resource mapping:
  - Helping governments and utilities plan and guide investment through improved understanding of resource availability and constraints
  - **Providing commercial developers with information on resource location**
  - Shortening project development times and access to finance by providing ground-based datasets for resource validation purposes

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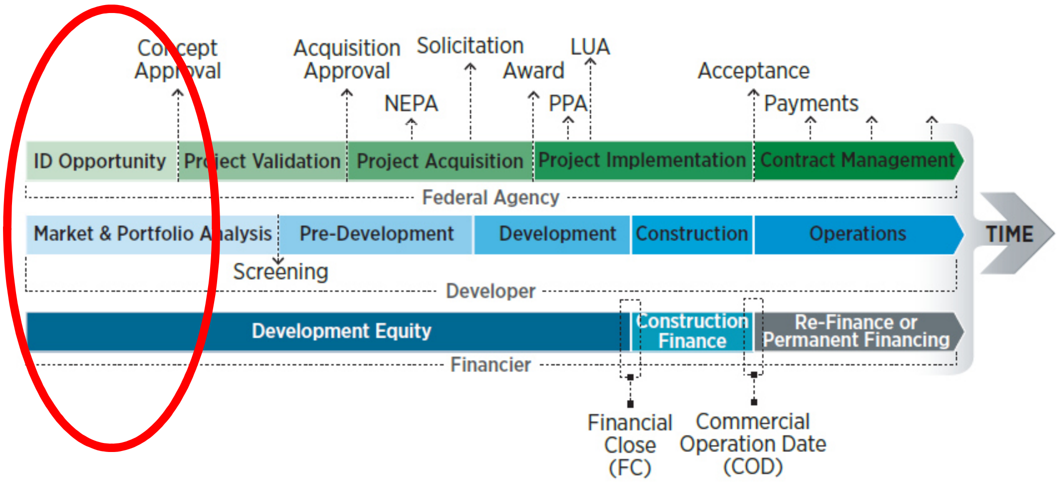
Resource mapping and project development

- The first step on a long process until project operation



Source: http://www1.eere.energy.gov/femp/pdfs/large-scalereguide.pdf

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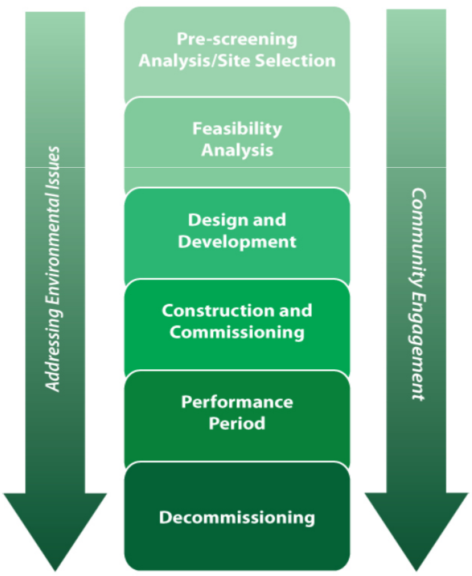
Renewable energy project planning

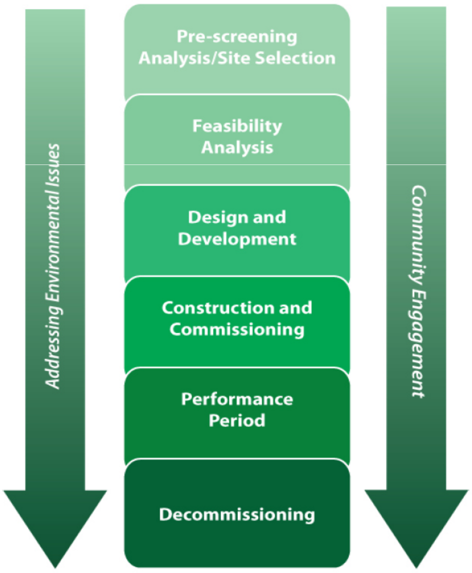
- Site selection based on:
  - Resource availability (maps)
  - Grid availability
  - Planning and support framework
- Feasibility Analysis (Site-specific assessment)
  - identify physical and spatial issues
  - determine technical performance potential (onsite measurement) and economic viability
  - identify environmental, social or other constraints



Source: http://www.epa.gov/oswercpa/docs/handbook_siting_repowering_projects.pdf

Renewable energy project planning

- Design and development
  - Design and planning of the physical aspects of the project (negotiation of financial, regulatory, contractual, and other nonphysical aspects)
- Construction and Commissioning
- Performance Period
  - Operation and Maintenance
- Decommissioning
  - equipment replacement, permit revision, and new financing; negotiating a new lease agreement



Source: http://www.epa.gov/oswercpa/docs/handbook_siting_repowering_projects.pdf

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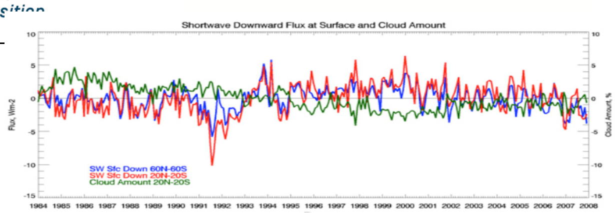
Longer term weather trends?



- Measurements usually have to take place for a longer period of time in order to convince investors of the quality of the site:
  - Wind projects may require 12-18 months of direct readings from a mounted met mast on each potential site. 12 months is possible but requires correlation with geographically close meteorological information from an airport or other measuring stations
  - Because CSP projects tend to be very large scale and depend on direct versus diffused irradiation, 12 months of data appears to be a minimum for CSP if correlated with 15 years of satellite data
  - Solar PV usually required one year of measurements

Source: David Renne, NREL

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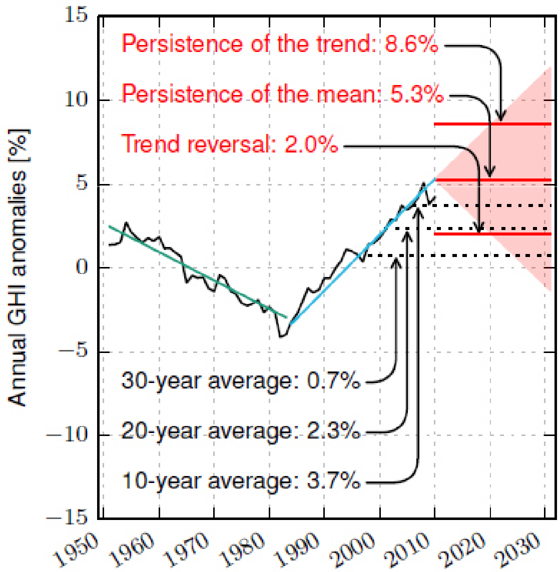
Longer term weather trends?

- Long-term fluctuations?
  - Effects from climate change and other environmental impacts
  - German average solar radiation 5% higher than expected (increase since mid-80s)
  - Opposite development in Chinese cities due to smog
  - "global dimming and brightening" - only the 10 most recent years as benchmark!



Source: Fraunhofer ISE (Müller et al. 2014)

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Short term variability due to whether events

- Not crucial for project finance
- However, crucial for predictability of electricity output and therefore for system (and market) integration
- Important improvements in
- Example: cloud shading for solar PV

Source: Windlogics/FPL (Adam Kankiewicz)

9. Assessment and revising of existing policies and frameworks?

Review and assessment

- Assess target achievement (annually, bi-annually)
- Identify bottle-necks and barriers (finance, grid access, administrative barriers, etc.).
- Adjust policies and framework conditions

Thank you very much for your attention!

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Additional slides

Technical solutions: solar pico systems

- Replace candle and kerosene lamps for lighting
- Solar pico systems = ‘solar lanterns’ and ‘solar kits’ - ‘ready to use’ packages, not requiring technical expertise or installation

- consist of
  - Solar PV panel,
  - an inverter,
  - and a battery

Technical solutions: solar home systems

- Standalone appliance commonly used to provide energy for a single household.
- more services than solar pico system
- Can run consumer electronics such as radios, TVs, or fridges.
- Can also power water pumps for clean drinking water and local irrigation

- unlike the pico systems, SHS require professional consultation, installation and service.

Improving stakeholder engagement in spatial planning for energy projects:

Lessons learned from Ontario (Canada)

Energy project siting in Ontario – The political process

- The Minister of Energy asked the Ontario Power Authority (OPA) and the Independent Electricity System Operator (IESO) to provide joint recommendations for new integrated regional energy planning process (siting)

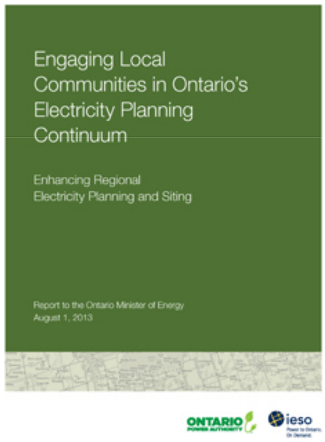
- Objective: support the development of future regional energy plans and site new energy infrastructure

- OPA and the IESO engaged with a broad spectrum of municipalities, First Nation and Métis, community associations, advocacy groups and other stakeholders to hear their perspectives about how best to improve these processes

Source: http://www.onregional-planning-and-siting-dialogue.ca/

Core recommendations for public engagement

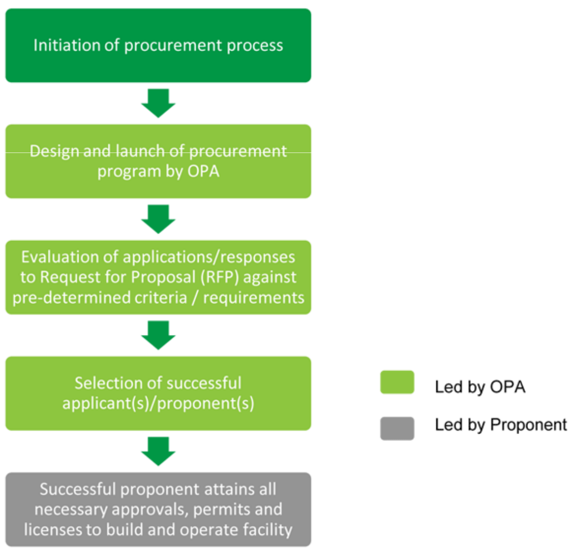
- Bringing Communities to the Table
  - "Community Outreach Early and Often"
- Linking Local and Provincial Planning
- Reinforcing the Planning/Siting Continuum
- Enhancing Electricity Awareness and Improving Access to Information



Source: http://www.onregional-planning-and-siting-dialogue.ca/pdf/Continuum_Chart.pdf

Link the procurement process with public engagement

- Consider broader criteria in the generation procurement process, such as local priorities
- Give more weight to addressing concerns of local community to mitigating risk of opposition
- Consult Advisory Committee regarding the local priorities to be reflected in procurement design
- Criteria could reflect environmental
- Assessment criteria



Source: http://www.onregional-planning-and-siting-dialogue.ca/