IRENA Energy Planning Activities

Dolf Gielen, Director IITC

Abidjan, 12 December

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IRENA AFRICA WORK 2011-2012

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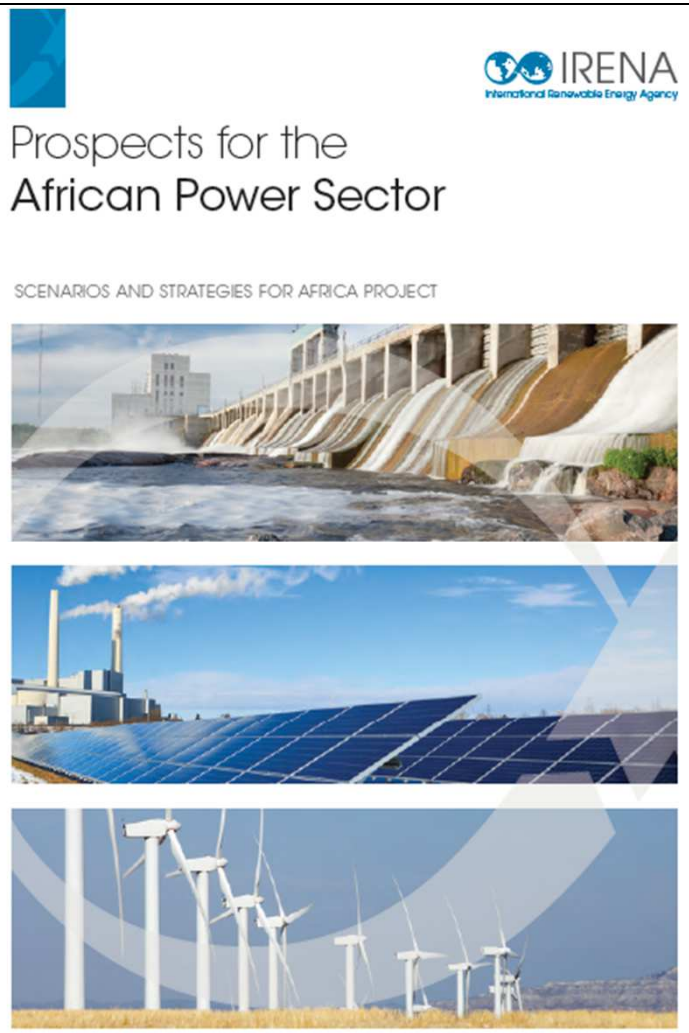
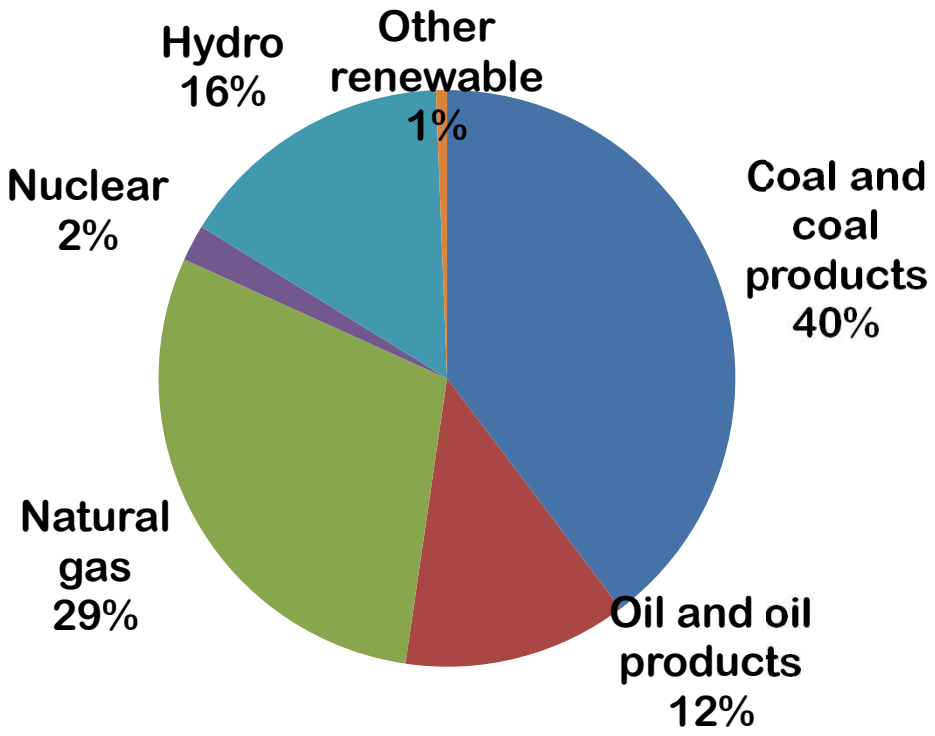
June 2011

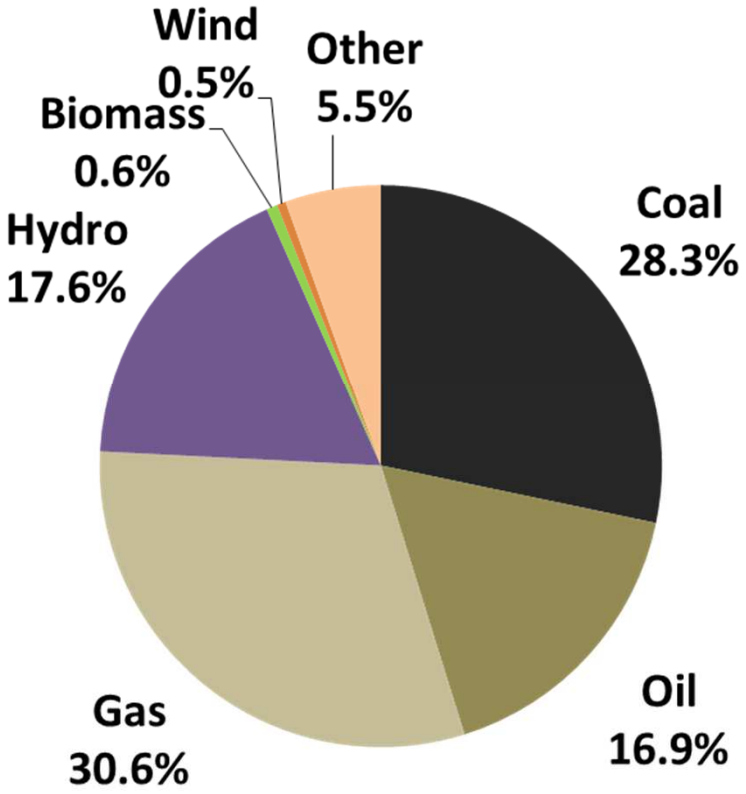


January 2012

Power generation mix



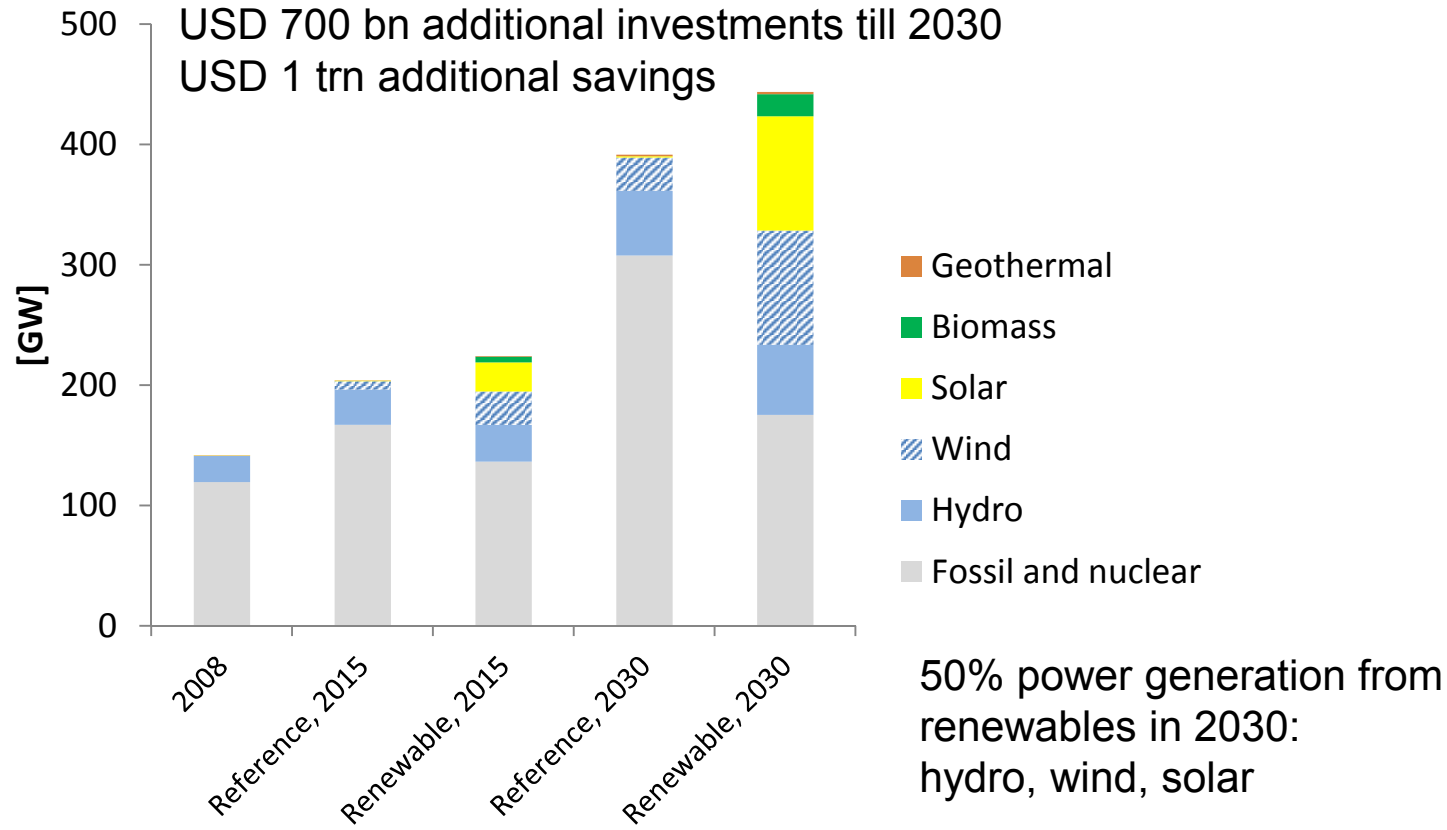
Power generation mix
17% renewables in 2009



Power capacity
19% renewables in 2011

Power Generation Capacity, 2008-2030

Renewables scenario requires more capacity and higher upfront investments



50% power generation from renewables in 2030: hydro, wind, solar

Subsequent work

- Refined power sector models for ECOWAS-WAPP region and SAPP
  - Workshop Johannesburg November
  - This workshop
- Renewable power generation cost in Africa – data collection together with GIZ
  - Report release January 2013
- IEW Cape Town 19 July: special session focusing on renewables
- Assessment of local manufacturing opportunities in Africa
- Africa publication summarizing insights is in preparation
  - Summary release January 2013

Prospects for decentralized generation for 2030

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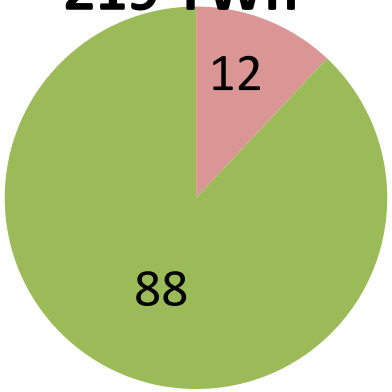
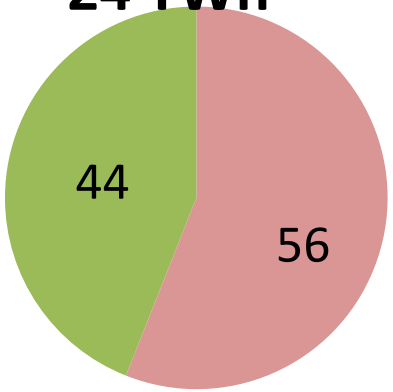
Southern Africa: Urban
219 TWh



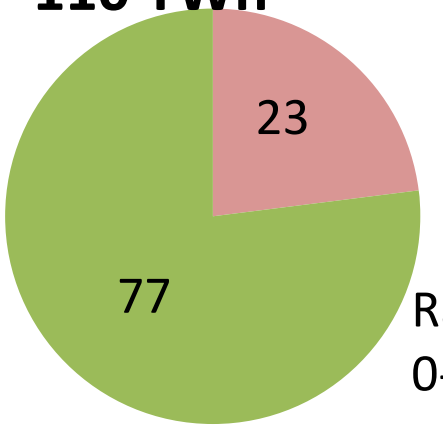
Range:
5-45%

Southern Africa: Rural
24 TWh



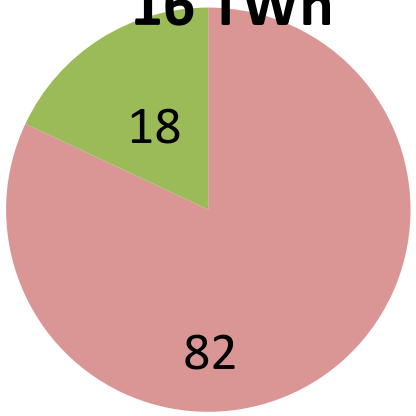
Range:
40-90%

Western Africa: Urban
110 TWh



Range:
0-60%

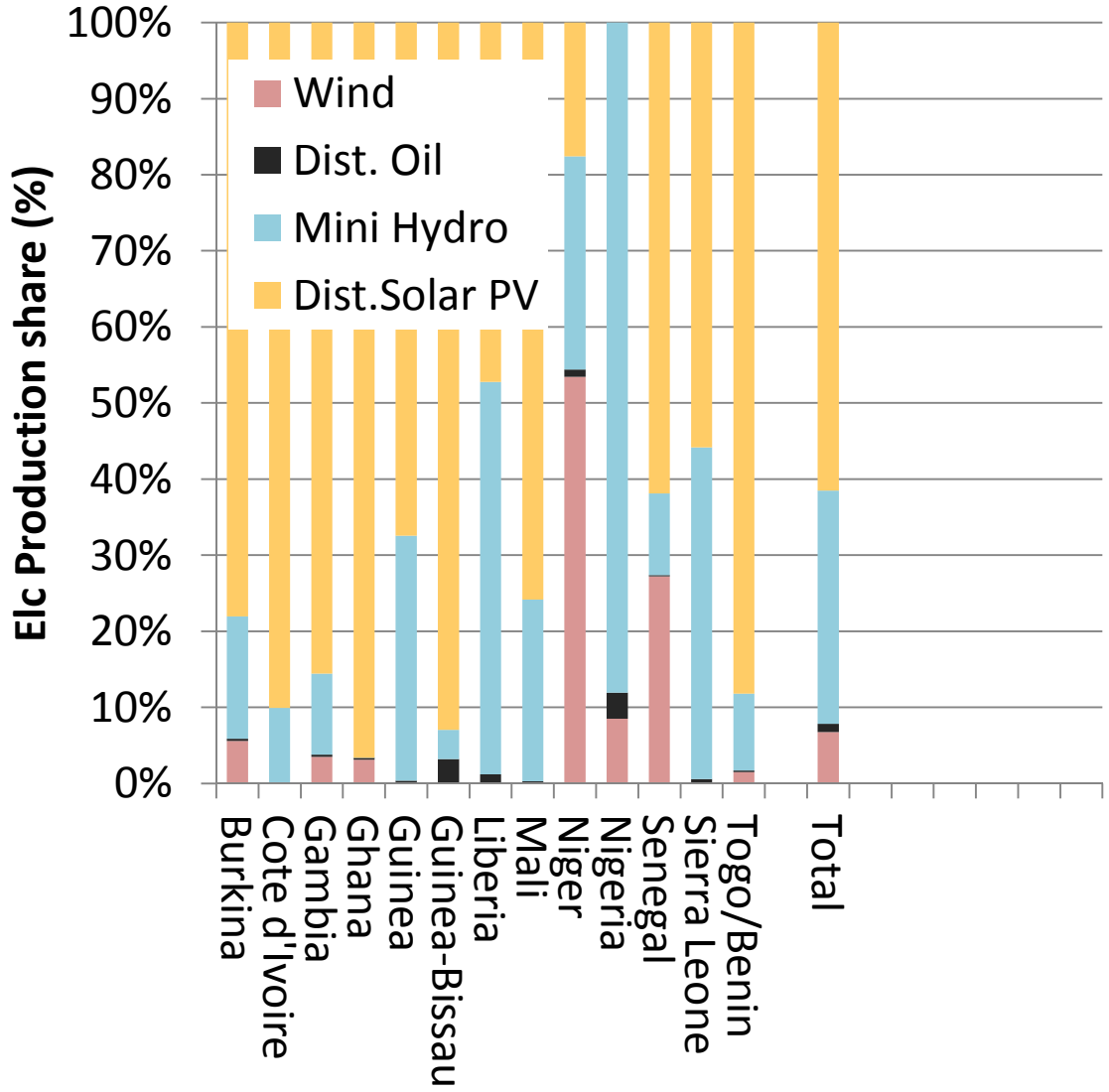
Western Africa: Rural
16 TWh



Range:
45-92%

Decentralized Centralized

Cost competitive distributed generation options in 2030



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OTHER ENERGY PLANNING WORK 2011-2012

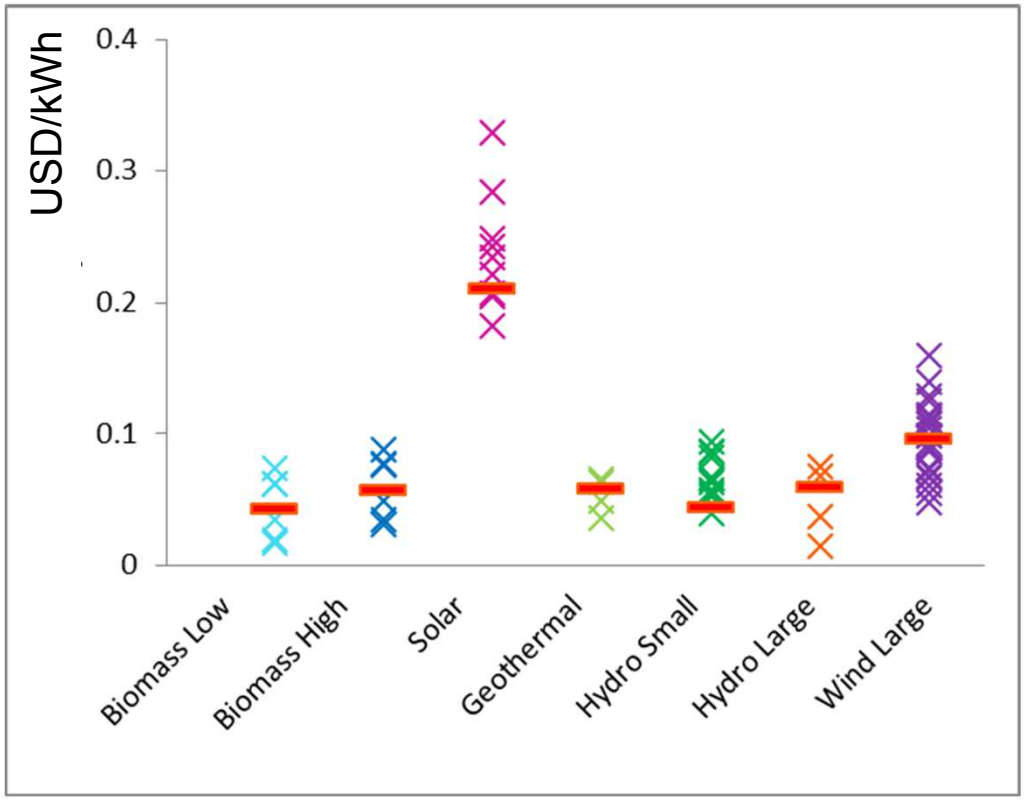
- SE4ALL
  - Tracking methodology
  - Start with REMAP (how to operationalize SE4ALL renewables objective)
  - Renewable energy planning as initiative in the framework of SE4ALL
- Roadmap renewables in industry
- Roadmap renewables in cities
- Technology briefs
  - Heating and cooling, liquid biofuels, bioethylene, biomethanol, desalination, biomass co-combustion, heatpumps, etc
- Pacific and global renewable islands network (GREIN)

IRENA Islands Initiative

- Islands are diverse and need tailor made solutions – *also relevant for African rural areas*
- Renewables provide a cost-effective solution
- Ambitious transition plans – many islands moving to 50%+ variable renewables in their mix
  - Request to establish GREIN Global RE Islands Network (of countries)
- Provide guidance how to operate power systems with high shares of variable renewable power

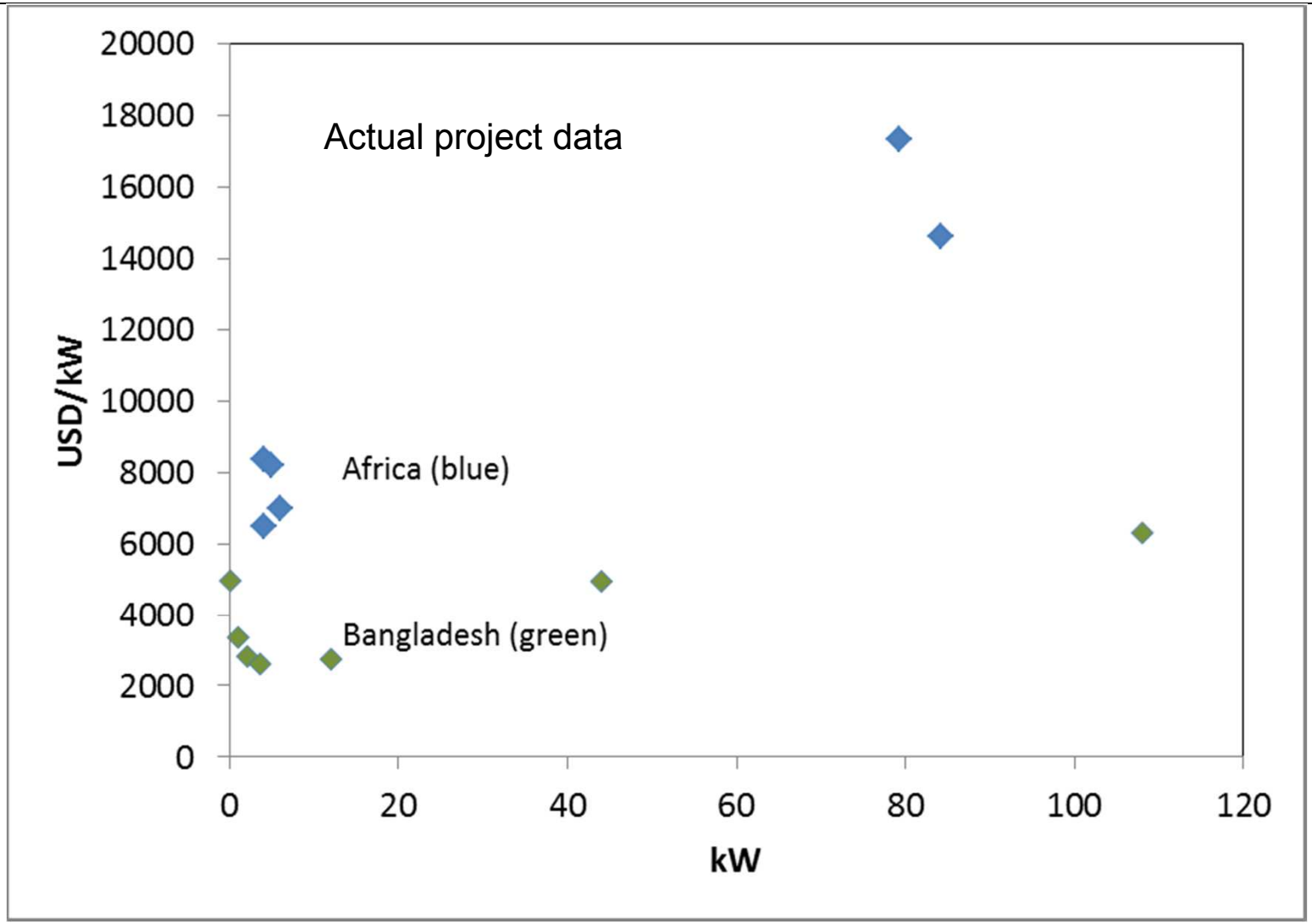
  - Ongoing assessment of grid stability simulation software packages
  - Planned measurements for verification
  - Complement assessment with a country implementation roadmap

Cost of renewable electricity supply in Africa



Source: IRENA, forthcoming

PV off-grid installed costs Africa and Bangladesh



Limited data availability, some very expensive projects

Source: IRENA/GIZ

PLANNED IRENA WORK 2013 OVERVIEW

Work Programme 2013

- Central, East, North Africa analysis to complete Africa work
  - Including contributions to the East Africa Clean Energy Corridor initiative
- Focus region Latin America and Caribbean in 2013
- Start with South Asia analysis 2nd half 2013

- REMAP 2030
  - Including Grids and Storage roadmaps
  - Including Pacific and national roadmaps, upon request
  - Technology briefs

- Islands activities
  - Dynamic grid assessment for five islands
  - Roadmaps for three islands
  - Tourism and hotel sector

Follow-up work ECOWAS Power Pool Energy Planning Work

- Follow-up ECOWAS-WAPP modeling?
- Not part of the work programme 2013
- If there is interest it may be possible to obtain project funding
- Clear formal requests needed from the government through IRENA focal point
- Ongoing discussions regarding more detailed country level analysis
  - However 104 “clients” for secretariat work – who prioritizes based on what ?
- Next step would be capacity building in the region (ECREEE, ECOWAS power pool secretariat ? Universities ? Government R&D institutes ?)
- Ongoing discussions with potential sponsors that have expressed interest

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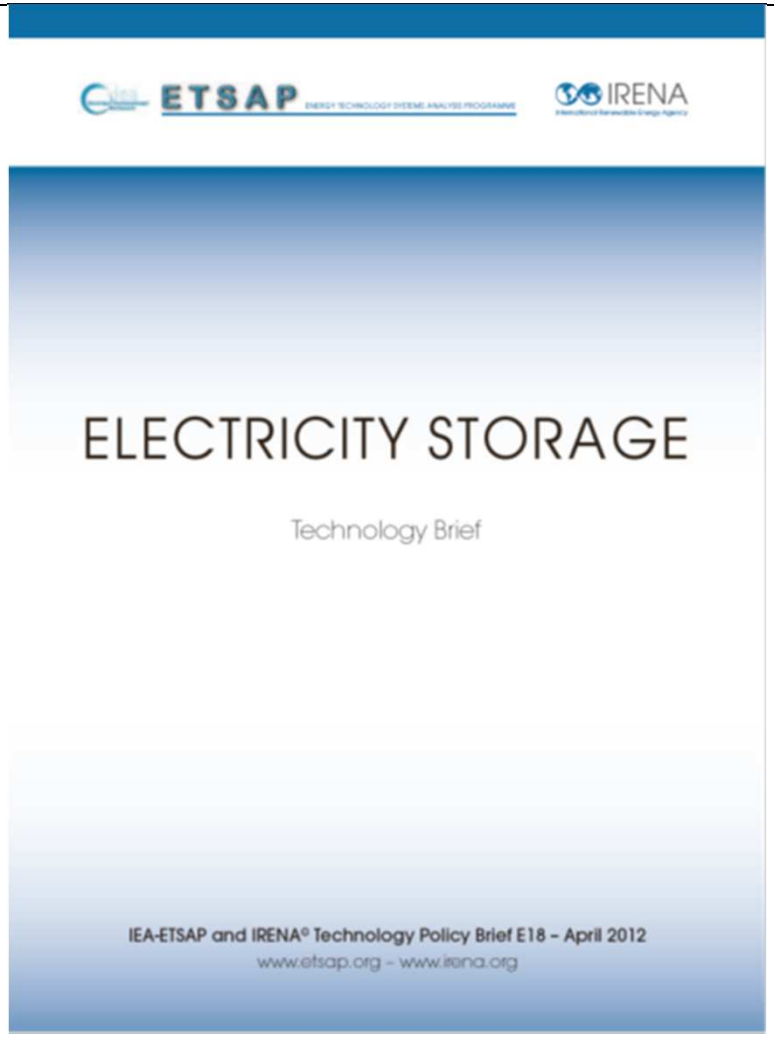
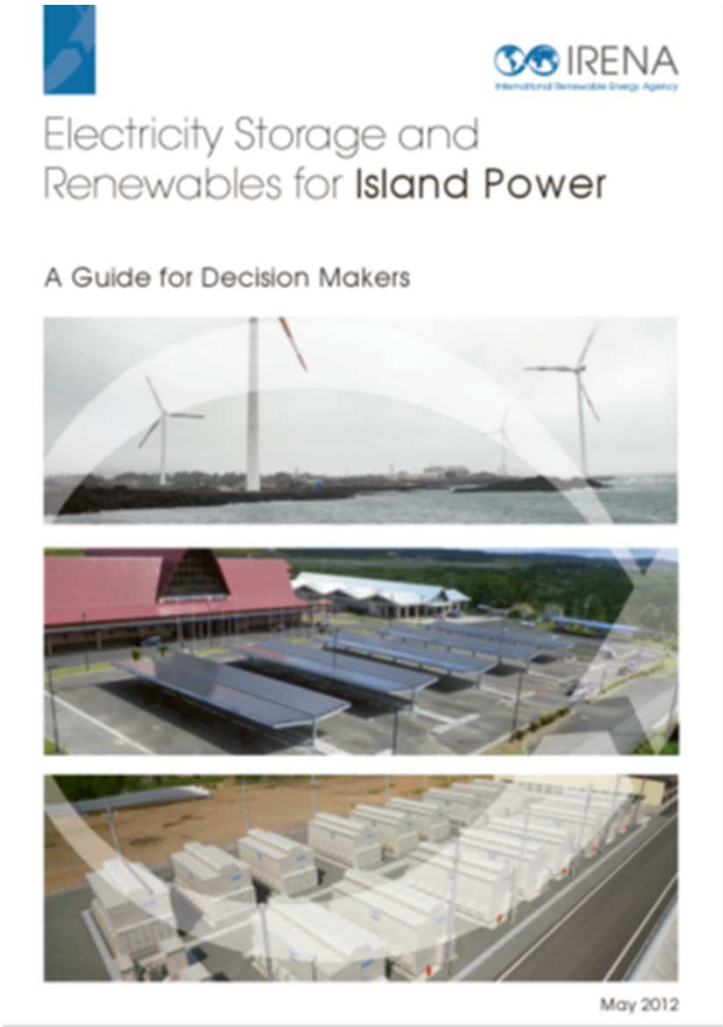
PLANNED WORK 2013 I GRIDS AND STORAGE

Electricity storage



May 2012



May 2012

Summary of findings: Storage for Minigrids

- Storage can significantly reduce diesel use and help integrate renewables
- Many new storage technologies under development
- Storage technologies improving, but still expensive
  - Exceptions: lead-acid batteries, pumped hydro
- Storage *alone* can cut diesel use 25%
- Diesel + Renewables + Storage = lowest levelized cost
- Thoughtful system design and integration is essential!

PLANNED WORK 2013 II
SE4ALL AND REMAP 2030

IRENA REMAP 2030

- SE4ALL has thee objectives, including **doubling the global share of renewable energy by 2030 and global access**
- Sustainable Energy for All will continue after 2012 as a public-private partnership. Advisory group co-chaired by UN Secretary General and World Bank President
- IRENA hub for renewables
- REMAP 2030: roadmap how to operationalize the target
- Policy discussion at IRENA Assembly in Abu Dhabi,12-13 January 2013
  - Ongoing global analysis, followed by refinements for regions/countries/sectors/technologies
  - RE action agenda under development
- Key insights
  - Strong growth of modern renewables likely, but with policies under consideration today there will be a **one third shortfall of the objective in 2030**
  - Attractive opportunities exist to boost the renewable share further
  - Developed *and* developing countries must act

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THANK YOU !