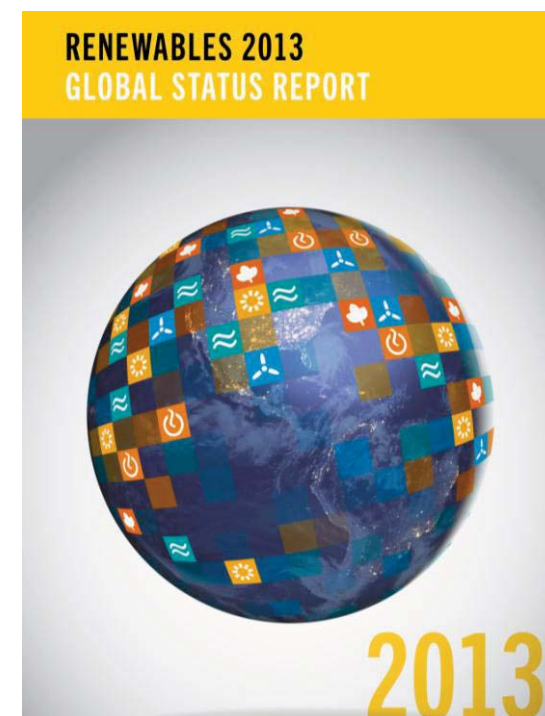


International trends towards using renewable energy applications in rural areas with a focus on MENA region

Christine Lins
Executive Secretary of REN21

Regional Conference
Rabat, 26th November 2013



About REN21



A Multi-stakeholder Policy Network grouping

Science & Academia:

IIASA, ISES, SANEDI, TERI

NGOs:

CURES, GFSE,
Greenpeace, ICLEI, ISEP,
JREF, WCRE, WRI, WWF

International Organisations:

ADB, EC, GEF, IEA, IRENA,
UNDP, UNEP, UNIDO,
World Bank

Industry Associations:

ACORE, ARE, CEC, CREIA,
EREC, GWEC, IGA, IHA,
WBA, WWEA



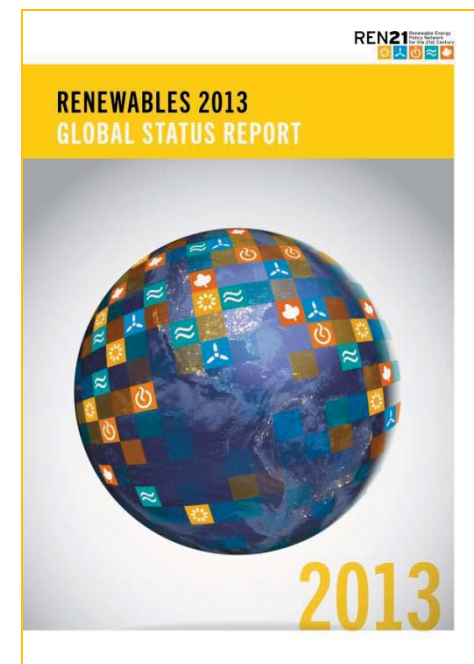
National Governments:

Brazil, Denmark
Germany, India, Norway,
Spain, Uganda, UAE, UK

REN21 Renewables Global Status Report



- Launched along with UNEP's Global trends in RE investment
- Team of over 500 contributors, researchers & reviewers worldwide
- The report features:
 - Global Market Overview
 - Industry Trends
 - Policy Landscape
 - **Rural Renewable Energy**
- All renewable energy technologies
- Sectors: power, heating/cooling, transport
- New elements in 2013:
 - Feature on system transformation



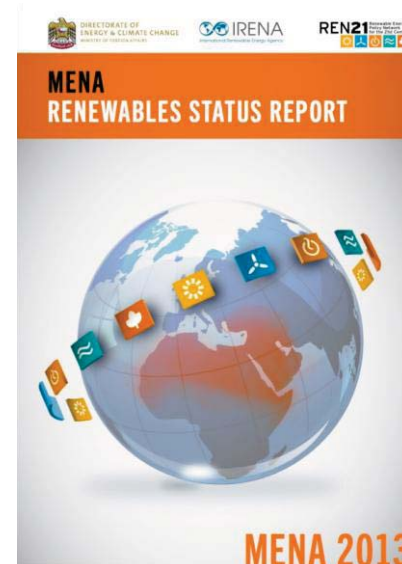
www.ren21.net/GSR

www.ren21.net

MENA Renewables Status Report



- Launched together with **IRENA** and the **United Arab Emirates (UAE)** as an outcome of the Abu Dhabi International Renewable Energy Conference (**ADIREC 2013**)
- Regional Partners: Union for the Mediterranean (UfM), Observatoire Méditerranéen de l'Energie (OME), the League of Arab States (LAS), the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE), Bloomberg New Energy Finance (BNEF)
- 50 contributors, researchers & reviewers from the region
- The report features:
 - Market Overview
 - Policy Landscape
 - Investment Trends
 - Localising the RE Value Chain
- All renewable energy technologies and sectors



MENA Market Overview: Renewables Energy



- RE markets have evolved rapidly in recent years with a diverse range of countries announcing projects and policies in the region.
- **Energy Consumption** in the region **increased by 15%** between 2007 and 2010 due largely to population growth and economic progress.
- In 2010, **RE share** in the **Total Primary Energy Supply** of the MENA Countries was **1%**.
- With high fossil fuel prices resulting in **steep bills for importing countries** and **opportunity costs for exporting countries** driving, policymakers are turning to renewable energy.
- Given the **declining cost** of modern **renewables** and the **increasing costs of fossil fuels** technologies like wind and solar have been considered in all MENA countries to meet growing energy needs.

Three complementary goals by 2030:

- 
1 ENSURE
universal access
TO MODERN ENERGY SERVICES.
- 
**2 DOUBLE THE GLOBAL RATE OF
IMPROVEMENT IN**
energy efficiency
- 
3 DOUBLE THE SHARE OF
renewable energy
IN THE GLOBAL ENERGY MIX.



SUSTAINABLE
ENERGY FOR ALL

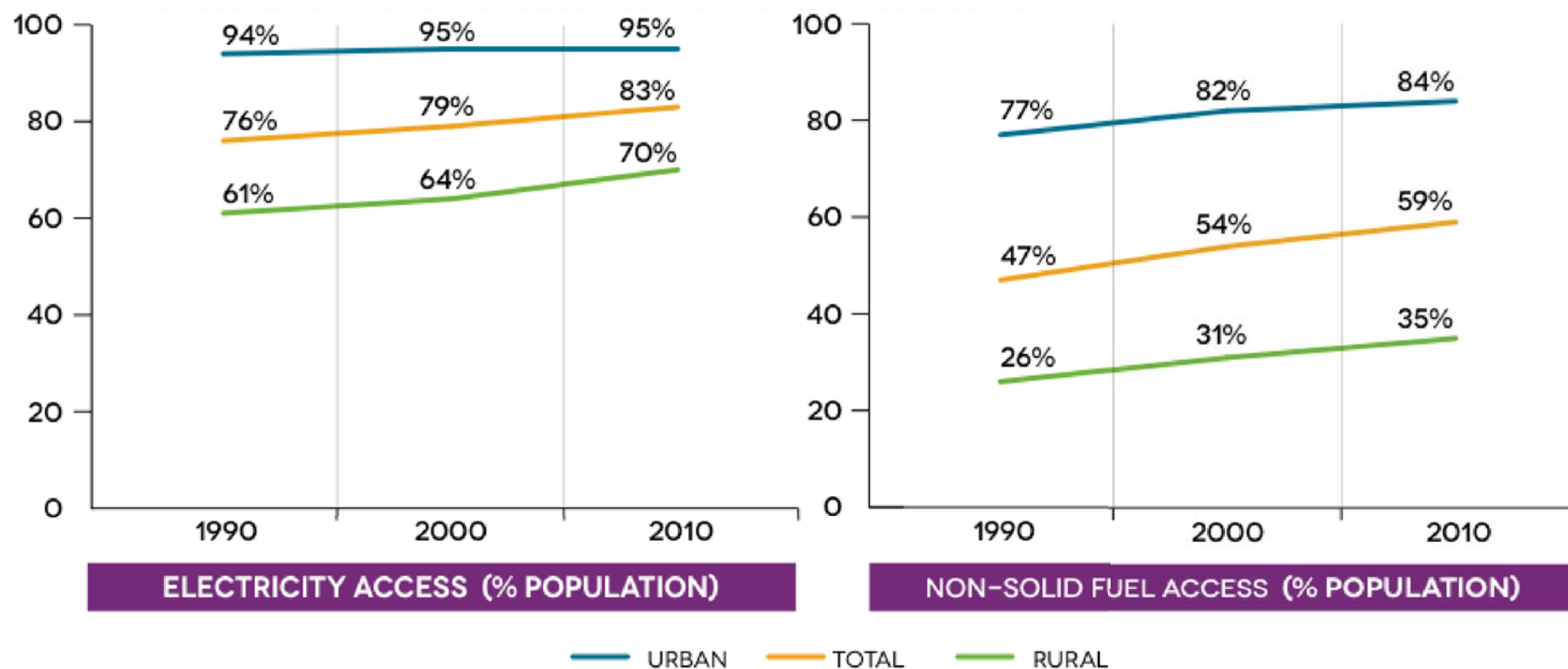
Starting point for SE4ALL goals can be established on this basis



| Percent | Universal access to modern energy services | | Doubling global rate of improvement of energy efficiency | Doubling share of renewable energy in global energy mix |
|---------|--|--|---|---|
| | Proxy indicator | Percentage of population with electricity access | Percentage of population with primary reliance on non-solid fuels | Rate of improvement in energy intensity |
| 1990 | 76 | 47 | -1.3 | 16.6 |
| 2010 | 83 | 59 | | 18.0 |
| 2030 | 100 | 100 | -2.6 | 36.0 |

Source: Global Tracking Framework @ International Energy Agency and World Bank, 2013

Access to modern energy rose slightly driven by increase in rural access rate



SOURCE: WB, WHO

Electricity Access by region and country

| Region/Country | Electrification Rate | People Without Access to Electricity | Target |
|---------------------------------|-------------------------------------|--------------------------------------|----------------|
| | Share (%) of population with access | Million | Share (%) |
| All Developing Countries | 76.0% | 1,265 | |
| Africa | 43.0% | 590 | |
| North Africa | 99.0% | 1 | |
| Sub-Saharan Africa | 30.0% | 585 | |
| ECOWAS ¹ | 27.2% | 173 | → 100% by 2030 |
| Developing Asia ² | 82.0% | 628 | |
| China and East Asia | 91.0% | 182 | |
| South Asia | 68.0% | 493 | |
| Latin America | 94.0% | 29 | |
| Middle East | 91.0% | 18 | |

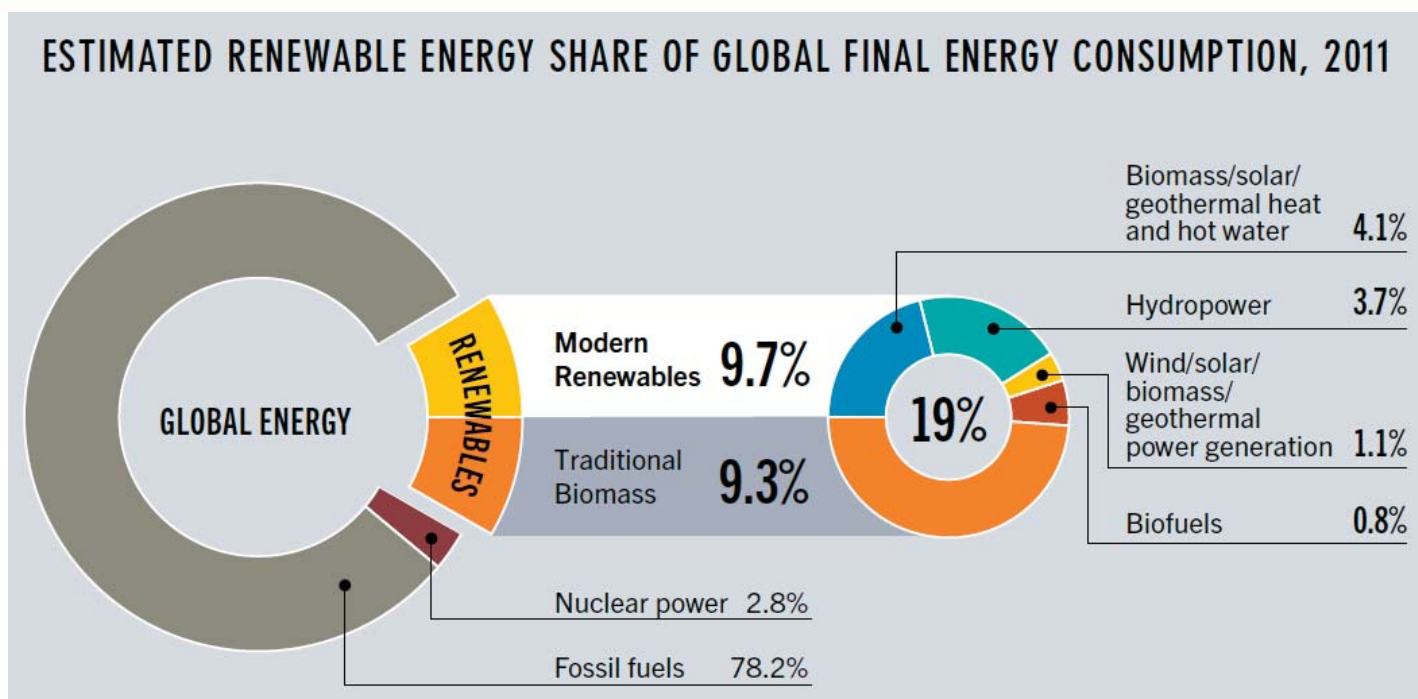
Source: REN21 Renewables 2013 Global Status Report

Population relying on traditional biomass for cooking

| Regions and Selected Countries | Population | |
|----------------------------------|------------|--------------|
| | Percent | Millions |
| Africa | 68% | 698 |
| Nigeria | 74% | 117 |
| Ethiopia | 96% | 82 |
| Democratic Republic of the Congo | 93% | 63 |
| Tanzania | 94% | 42 |
| Kenya | 80% | 33 |
| Other Sub-Saharan Africa | 75% | 328 |
| North Africa | 1% | 2 |
| Developing Asia ¹ | 51% | 1,814 |
| India | 66% | 772 |
| Bangladesh | 91% | 149 |
| Indonesia | 55% | 128 |
| Pakistan | 64% | 111 |
| Philippines | 50% | 47 |
| Vietnam | 56% | 49 |
| Rest of Developing Asia | 54% | 171 |
| Latin America | 14% | 65 |
| Middle East | 5% | 10 |
| All Developing Countries | 49% | 2,558 |
| World² | 38% | 2,588 |

Source: REN21 Renewables 2013 Global Status Report

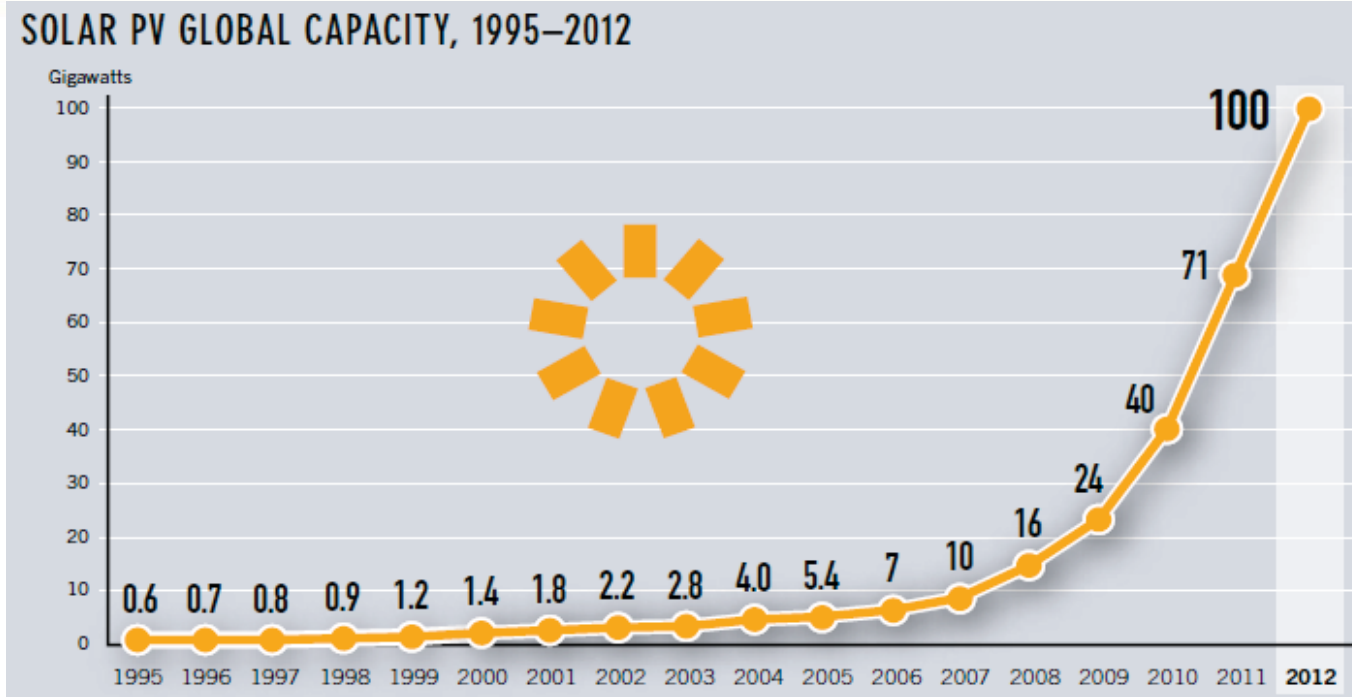
Renewable Energy in the World



Source: REN21 Renewables 2013 Global Status Report

- RE supplied an estimated **19%** of **global final energy consumption** in 2011.

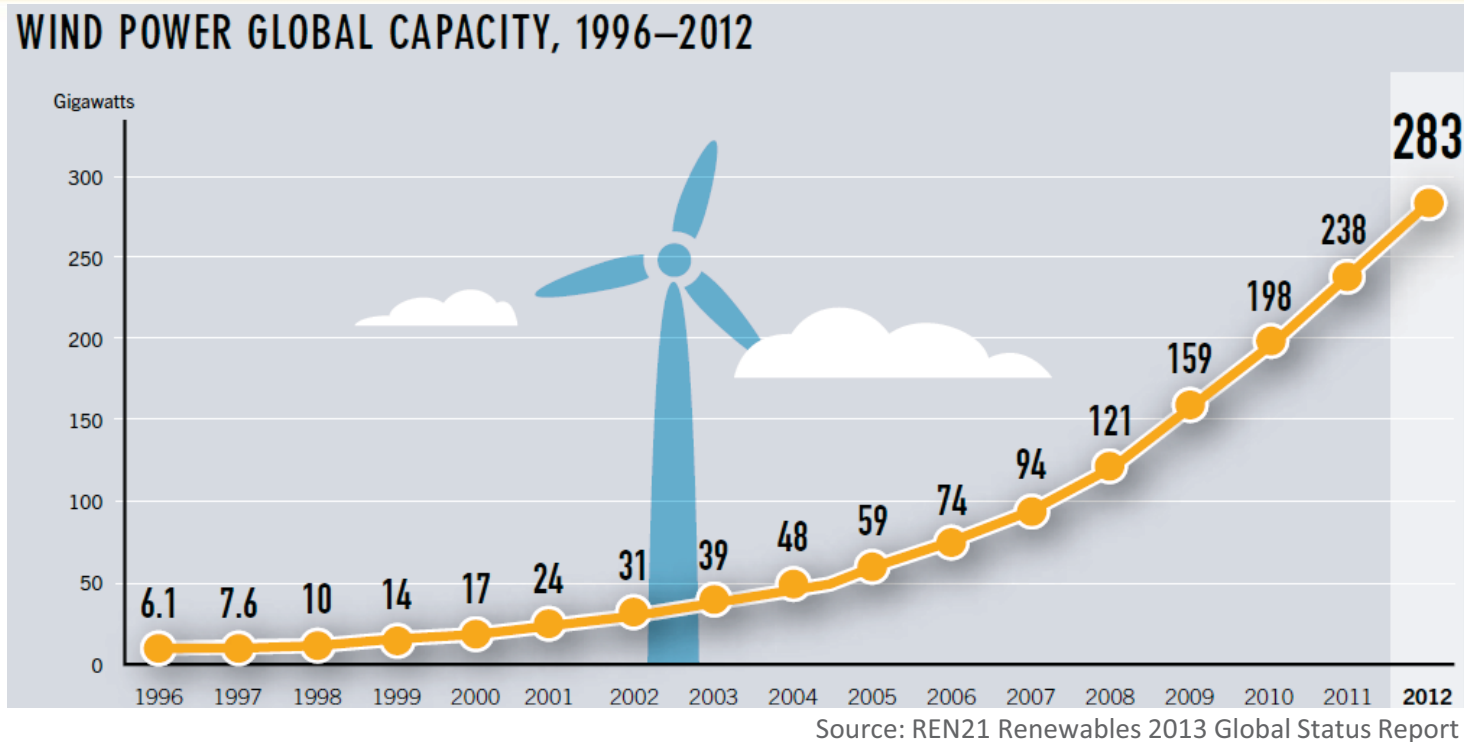
Solar Photovoltaics (PV)



Source: REN21 Renewables 2013 Global Status Report

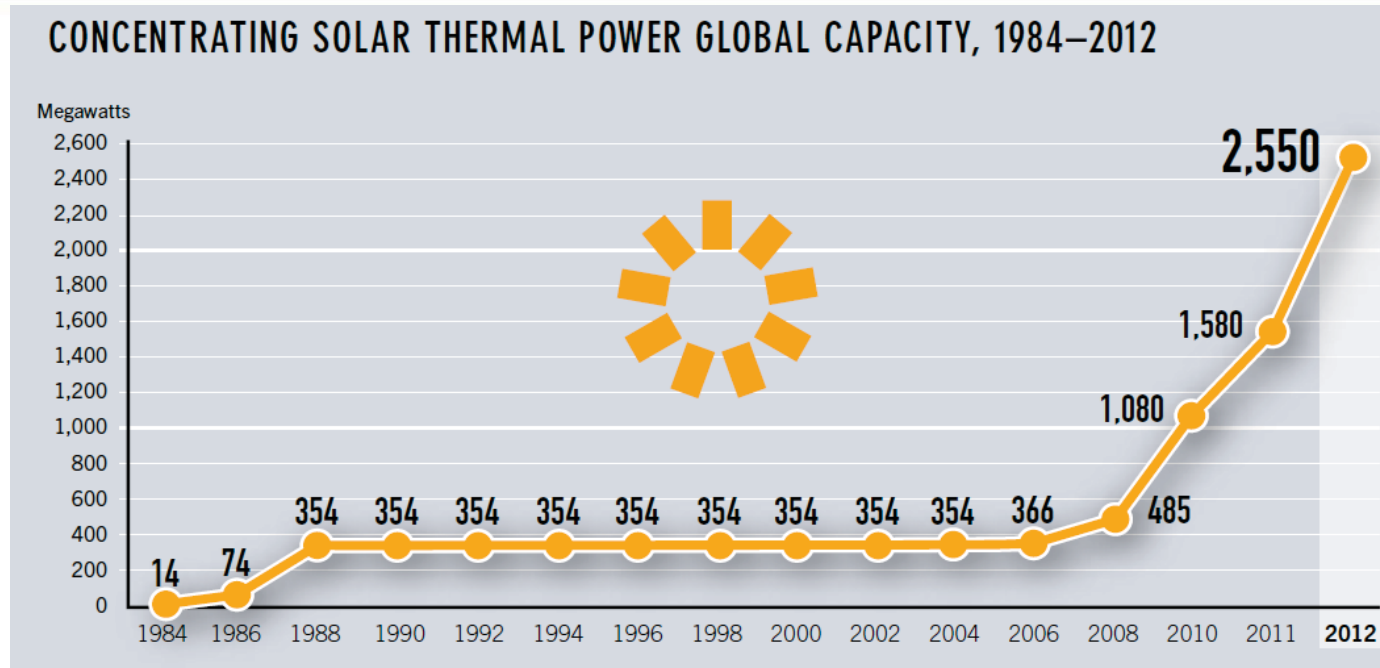
- Total global operating capacity of **solar PV reached the 100 GW milestone.**
- Prices of solar PV modules fell by more than 30 % in 2012.
- Similar to global trends, **solar PV** has been growing most rapidly in the MENA region with an **annual average growth rate of 112% from 2008 – 2011**

Wind Power



- Almost 45GW of wind power capacity came in operation in 2012, increasing global wind capacity 19% to 283GW.
- Total of **1.1 GW of wind capacity by the end of 2012** across 9 MENA countries.

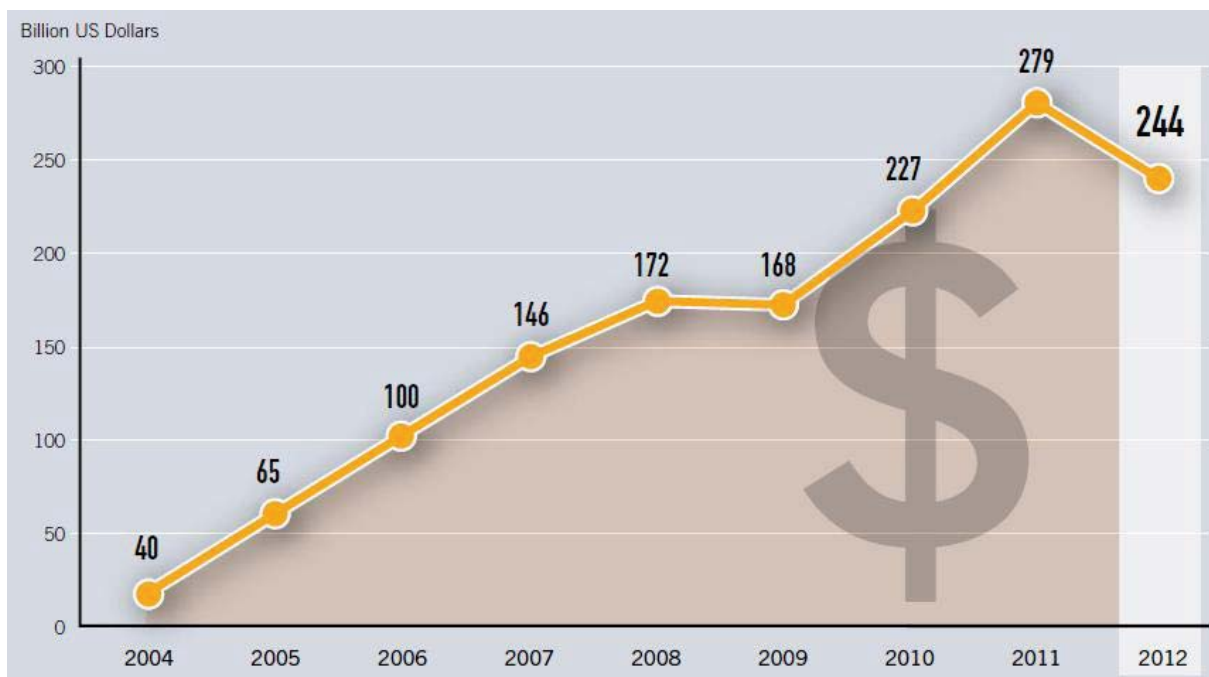
Concentrating Solar Thermal Power (CSP)



Source: REN21 Renewables 2013 Global Status Report

- Total global CSP capacity increased more than 60% to about 2,550 MW.
- In 2011, **40% of the countries operating CSP plants in the world were located in the MENA region**: Algeria, Egypt, Iran and Morocco.
- In 2013, these countries were joined by the UAE which operates **the world's largest CSP plant**, Shams 1, with an installed capacity of 100MW.

Global New Investment in Renewable Energy



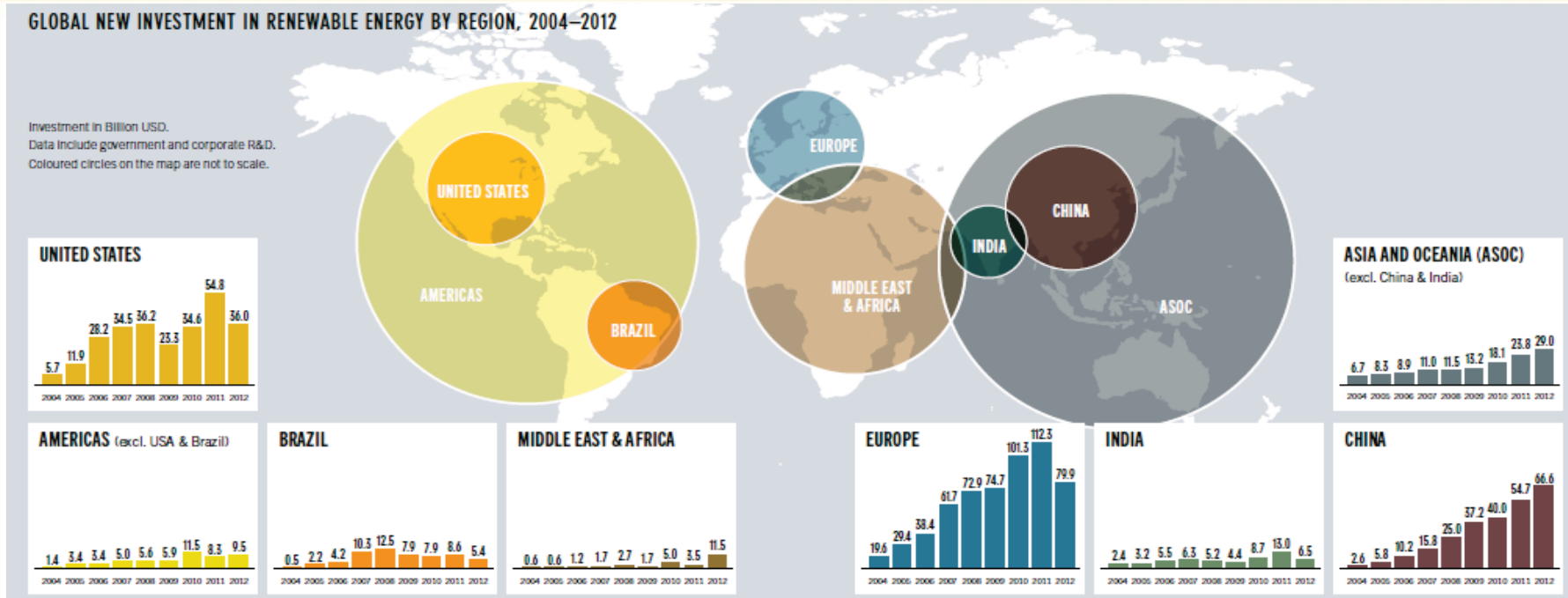
Data Source: UNEP FS/ BNEF Global Trends in Renewable Energy Investment 2013

- Global new investment in renewable power decreased 12% from the previous year's record (still the second highest ever).
- **Installed capacity continued to grow due to falling technology costs.**
- 2012 showed a continued shift in the balance of investment activity between developed and developing economies.

Investment Flows

GLOBAL NEW INVESTMENT IN RENEWABLE ENERGY BY REGION, 2004–2012

Investment in Billion USD.
Data include government and corporate R&D.
Coloured circles on the map are not to scale.



Data Source: UNEP FS/ BNEF Global Trends in Renewable Energy Investment 2013

- Dramatic shift in the balance of new investment activity between developed and developing economies.
- **Developing countries** reached USD 112 billion, representing 46% of the world total; this was up from 34% in 2011, and continued an unbroken eight-year growth trend.
- **Developed economies** fell 29% to USD 132 billion, the lowest level since 2009.

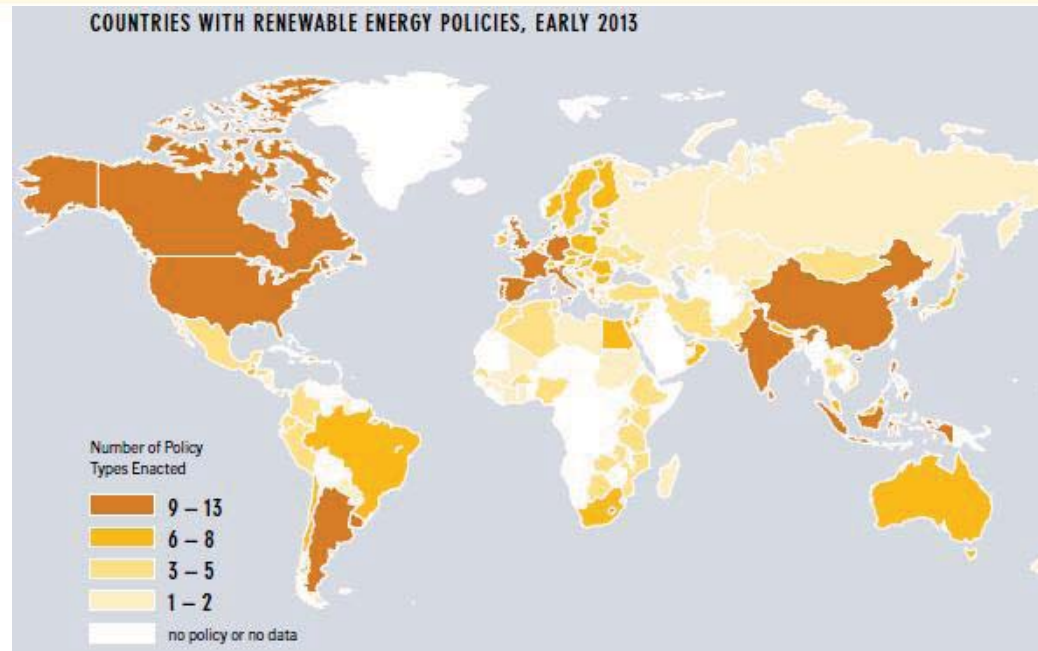
Renewable Energy and Jobs



Data source: IRENA , Renewable Energy and Jobs (2013)

- Worldwide renewable energy employment continues to increase.
- An estimated **5.7 million people** work in the renewable energy sector.

Renewable Energy Policy Landscape



Source: REN21 Renewables 2013 Global Status Report

- At least **138 countries** had **renewable energy targets by the end of 2012**.
- The number of countries with renewable energy targets more than doubled between 2005 and 2012.
- **All 21 MENA countries now have policy targets**, up from 5 in 2007, with at least 19 countries having technology specific targets.

Rural Renewable Energy in the MENA region



- **Electrification** rates are now **above 99%** or more in **11 of the 19 countries** for which reliable data is available.
- **Rural areas specifically remain underserved** in some countries including Djibouti and Yemen. Only 5 countries have 99% access or more in rural areas.
- An estimated **20 million people** are without access to electricity, while at least **12 million** use traditional biomass for cooking and heating
- **Off grid** is a **frequently used solution** for remote and rural areas, where providing grid access would be very costly, financial resources are scarce, and attractive RE resources exist.

Minigrid Policy Toolkit



Source: ARE



- Target group: Policy makers
 - Senior decision-makers in public authorities
 - Senior technical staff and energy sector practitioners
- Provide essential information as well as hands-on recommendations to allow them to improve the **policy & regulatory framework for mini-grids**
 - Technology
 - Applicability
 - Operator & Business Models
 - Policy/Regulatory Implications
 - Case Studies
- **Launch in February 2014 & dissemination in workshops**
(Rural Energy Access: A Nexus Approach to Sustainable Development and Poverty Eradication, 4-6 December 2013, Addis Ababa)

Local Manufacturing and Value Chains in RE



- Policymakers are increasingly aware of the potential national development impacts of renewable energy.
- Several countries have developed policy frameworks to stimulate local manufacturing and innovation, especially for solar and wind.
- This interest is particularly strong in Saudi Arabia, UAE, Egypt, Morocco, Tunisia.
- The report provide an overview of the different approaches undertaken in these 5 MENA countries to foster domestic renewable energy industries

GSR 2014: Distributed Renewable Energy (DRE) in Developing Countries



- Present the reality of the DRE sector by combining grass root and multi-country institutional perspectives
- Regional Spotlights: Latin America & Caribbean, Asia, Africa
- Focus on Rural electrification and Heating and cooking
- Close data gaps by bringing together different actors and benefiting from an informal knowledge based community
- Influence policy makers and investors
- Providing a concise overview of the DRE field, exhibiting its growing market
- **Help us close the gap by contributing your expertise:**
 - data on ongoing programmes and projects at the community, country and international levels
 - Provide information on policies, technologies, business models, investment climate, etc.



In conclusion

- Achieving objectives will take bold policy action aimed at doubling or tripling financial flows.
 - Stable and predictable policy frameworks are key for the industry.
 - Doubling the share of renewables by 2030 will need to result in at least a tripling of the share of modern renewables incl. sustainable hydropower.
 - Both centralised and decentralised renewables will be needed.
 - Phase out of untargeted fossil fuel subsidies is indispensable (RE support is still 6 times less than fossil fuel subsidies).
 - Integration of renewable energy will become more important.
-

REN21 Flagship Products & Activities



Renewables Global Status Report

www.ren21.net/gsr



Renewables Interactive Map

www.map.ren21.net



Renewables Global Futures Report

www.ren21.net/gfr



Regional Status Reports



REN21+: REN21's Global Web Platform

www.ren21plus.ren21.net



The True Cost of Electric Power



Facilitation of IRECs



Global Status Report on Local Renewable Energy Policies



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