

ecological footprint/fertile soil
employment climate change/use of fossil fuel
rapid technological development aging population
endocrine disrupters gender imbalance
globalization/localization
global economy augmented reality/transparency
population changing geopolitical situation
open source connectivity
academics changing income distribution
urbanization

21st
CENTURY
SOLARMAP

SOLAR SOLUTIONS FOR THE FUTURE

INNOVATIVE
COLLABORATION
AND ACCELERATED
SOLAR UPTAKE

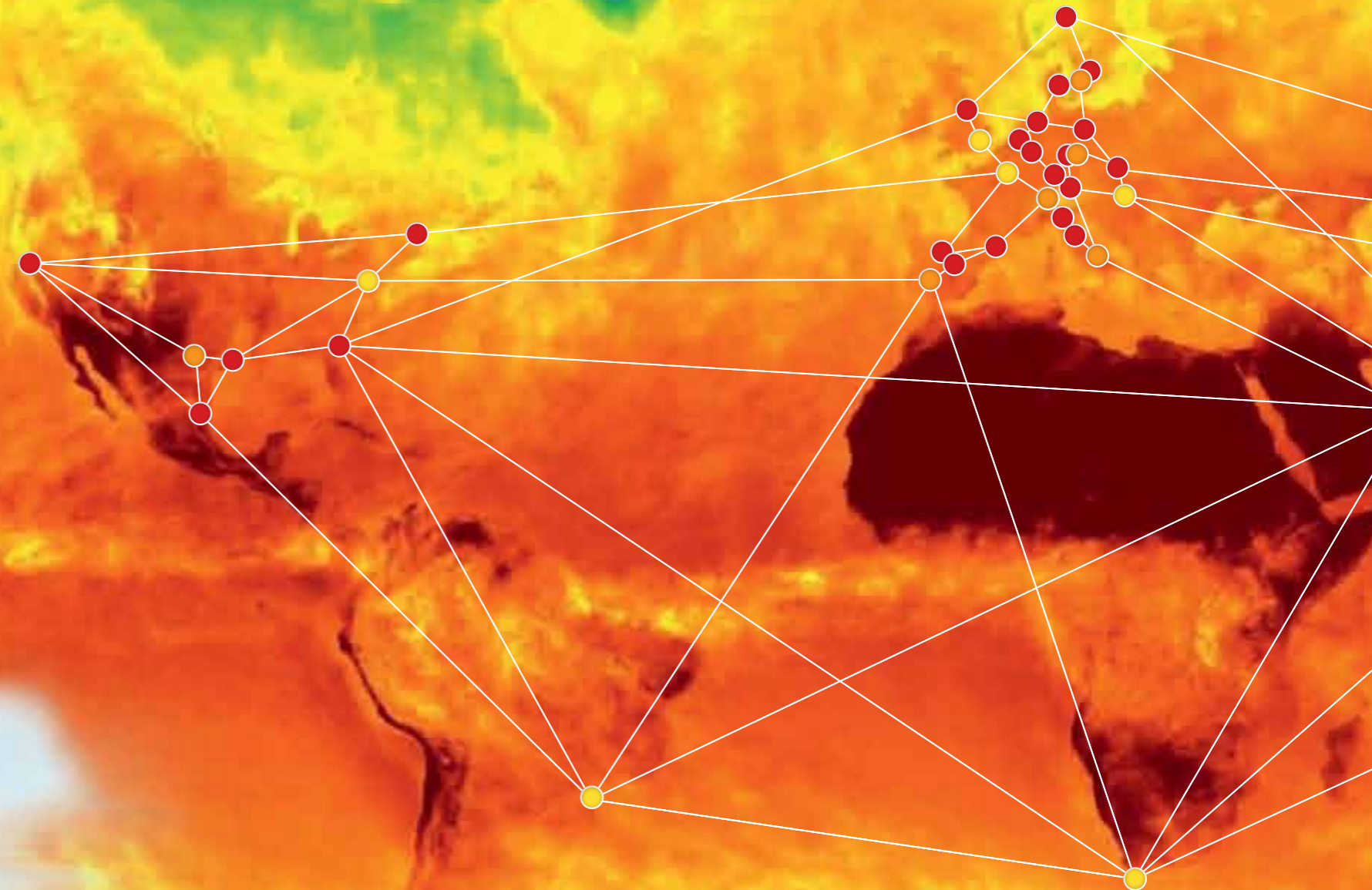
21st CENTURY SOLARMAP

The 21st Century Solar Map will help connect leading cities and companies in order to accelerate the uptake of solar solutions.

Criteria for inclusion of cities and companies on the map:

1. Supporting innovation and knowledge through collaboration
2. Fighting unemployment and exclusion by creating new jobs
3. Ensuring green growth through more efficient use of resources and energy, and through the application of new, greener technologies
4. Creating smart transport and energy infrastructure for the 21st century

- Cities & Companies
- Cities
- Companies

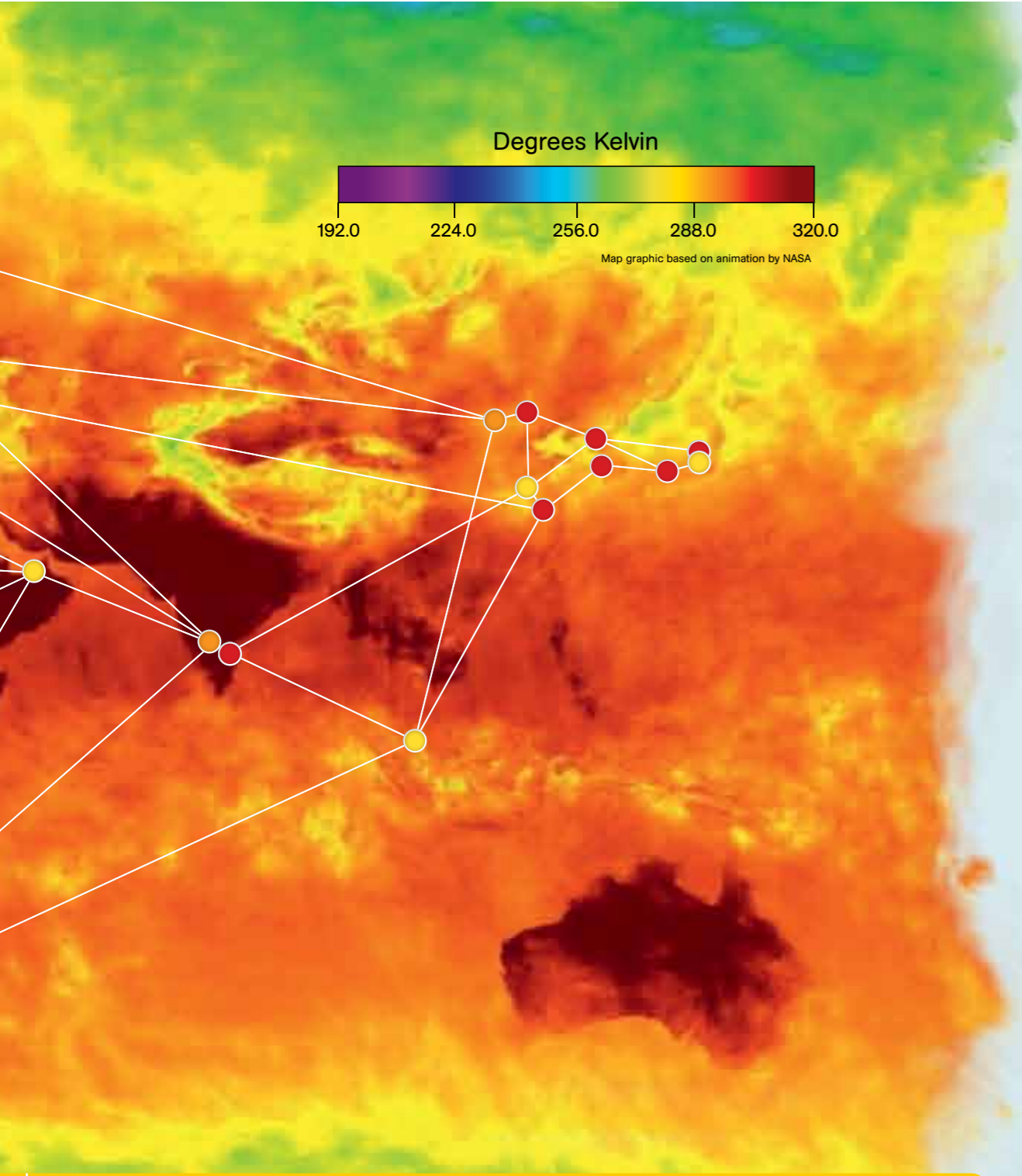


ENSURING ACCELERATED UPTAKE OF SOLAR SOLUTIONS FOR THE FUTURE

The 21st Century Solar Map identifies leading cities and companies that are contributing to accelerating the uptake of solar solutions in different ways. Among other things the map identifies strategic best practices (see table) to ensure sustainable job creation, innovation, and smart city development.

	STEP 0 Demonstration	STEP 1 Niche market	STEP 2 Beginning of broad market
PV providers	Few pioneers	Growing companies	Large companies and new networks
Customers	Few pioneers	Early adopters/first movers	New customer groups, including building, construction, transport, IT, logistic chemicals, appliances, etc
Energy suppliers	No experience	Very little experience, high resistance	Standardization of PV integration and grid access
Media	No coverage	Very little coverage	Increasing coverage, presented as real solution
Financial sector	Almost no support	Specialized financial companies and institutions	Broader support under specific financing conditions
Policy makers	Little interest beyond R&D	Governmental support for demonstration projects	Consolidated support concerning taxation and subsidies
Solution companies, e.g building, construction, transport, IT, logistics, chemicals, appliances, etc	Enabling demonstration projects	Supporting a few expensive buildings and the first generation of electric cars	New buildings are often smart net producing buildings

(The above table is based on a BSW table, "BSW-Solar Info Overview", with stages of the PV market development that have to be considered and analyzed carefully when designing necessary policies and framework conditions)



STEP 3 Sustainable mainstream

Established networks

All energy users

Solar focus instead of fossil

Solar solutions are seen as mainstream for energy, innovation and employment

Broad range of instruments and all major financial companies engaged

Clear solar targets and a framework that supports multiple policy goals with the help of solar solutions

Integrated systems for buildings, electric/hydrogen cars, appliances, infrastructure, industrial production, etc

Solar Solutions for the Future

The initiative “Solar Solutions for the Future” will support all solutions that move society toward a sustainable solar-based energy system. It will highlight efforts in all major sectors and will not be limited to the industries typically included in the solar sector.

These policy and business efforts include:

- Constructing buildings powered by solar
- Manufacturing solar-powered vehicles
- Designing IT control systems for solar solutions
- Providing logistics for goods and services based on availability of solar energy
- Developing software applications that help customers understand the benefits of solar solutions
- Communicating key solar messages in marketing

Solar Solutions is not about a specific company, sector, or technology; it’s a paradigm shift. Everyone can win by supporting Solar Solutions for the Future.

Creating a platform for Cities and Companies

Many stakeholders have expressed the need for a platform where information and best practices can be shared. Solar Solutions for the Future will use innovative digital tools to meet this need, in collaboration with stakeholders.

A 21st Century Solar Map

The 21st Century Solar Map is a Web 2.0 platform to support the accelerated uptake of solar solutions by cities and companies.

This platform will:

- Identify strategic solar solutions for the future
- Provide best practices
- Facilitate interaction among change agents
- Support innovation
- Encourage job creation
- Identify thresholds

The platform will be open to all stakeholders supporting an accelerated uptake of solar solutions.

Why now?

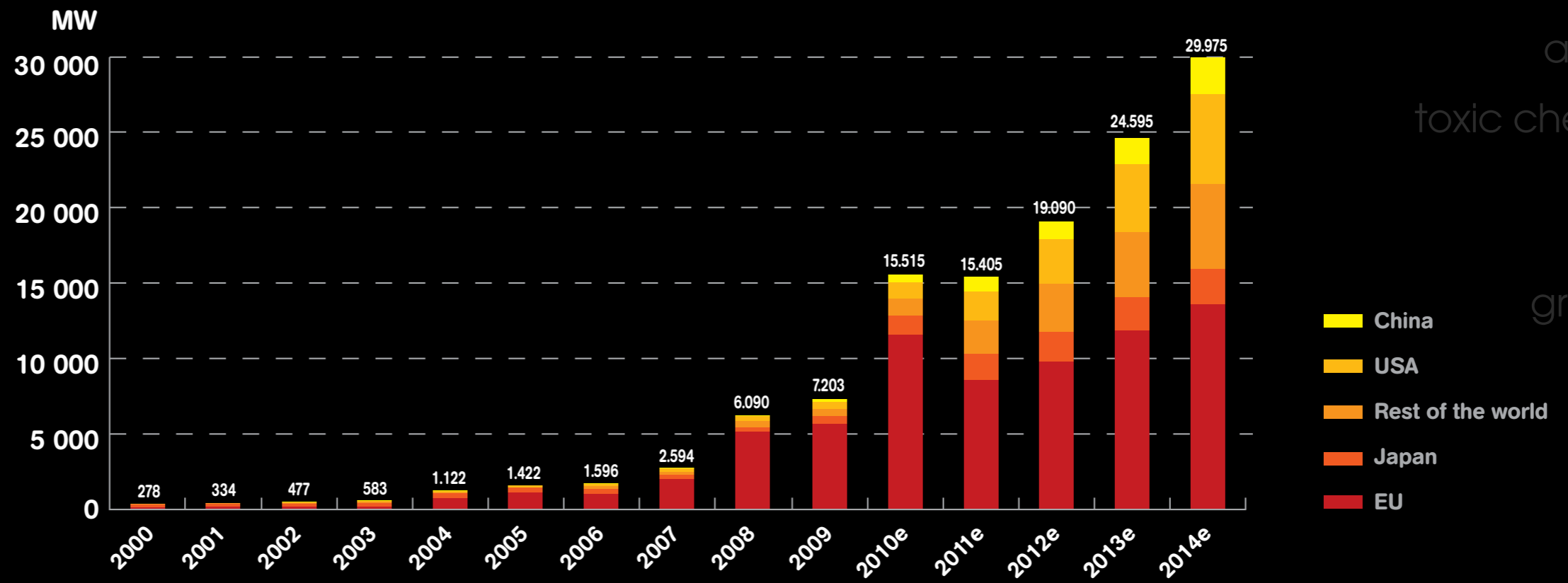
Climate Change and energy security are two of the greatest challenges of the 21st century. Reducing CO2 emissions and dependence on fossil fuels is a challenge but also an opportunity for those who can provide solutions. The cities and companies that are successful in implementing solar solutions will be winners in the 21st century.

Solar solutions present a historic opportunity to support job creation and innovation, as well as CO2 reductions and a sustainable economy. This opportunity could be leveraged by the implementation of a 21st Century Solar Map using cutting-edge web solutions.

There is broad agreement that solar solutions will become mainstream within the next few decades. However, with existing subsidies, lobbying, and structures supporting the old fossil infrastructure, solar solutions will come too late to sufficiently reduce carbon emissions, enhance energy security, create sustainable jobs, and enable global collaboration and poverty reduction, etc. To make solar mainstream sooner, rather than too late, the uptake of solar solutions must be accelerated.

In 1931, Edison said: "I'd put my money on the sun & solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that. I wish I had more years left." The question is when, not if, solar will become a mainstream energy solution. Turning current trends into opportunities will require an exponential growth of solar solutions and use of photovoltaics.

Accelerated uptake



EPIA: Global market outlook for photovoltaics until 2014, May 2010 update. Policy-Driven scenario

Accelerated uptake of solar solutions

Today's solar market is small and fragmented, but over the coming years solar solutions will move from a marginal energy contribution in a few countries to one of the most important in all parts of the world. While Europe will play the leading role initially, other parts of the world will have increasingly greater impact. Global cooperation among companies supporting solar solutions for the future will play a crucial role in order to ensure accelerated uptake and rapid global dissemination.

Supporting the project

This project is a unique global collaboration to develop the world's first Web 2.0 platform supported by leading companies, cities, academic institutions, and organisations around the world. China Renewable Energy Entrepreneurs Club (CREEC) has provided the financial resources to explore this opportunity. The initiative also builds on the declaration for a Low Carbon City Development Index signed by major stakeholders in Copenhagen in 2008.

For more information please contact: info@21stCenturySolarMap.net

Sources

BSW-Solar: Statistics for the German solar power industry (photovoltaics) http://en.solarwirtschaft.de/fileadmin/content_files/Faktenblatt_PV_EN_sep09.pdf • BSW-Solar: Solar Info Overview <http://www.greensunrising.com/resources/BSW%20-%20Solar%20Info%20Overview.pdf> • Covenant of Mayors: Sustainable Energy Action Plans http://www.eumayors.eu/support_structures/index_en.htm • EPIA: Global Market Outlook for Photovoltaics until 2014 http://www.epia.org/fileadmin/EPIA_docs/public/Global_Market_Outlook_for_Photovoltaics_until_2014.pdf • European Commission, Joint Research Centre: Photovoltaic Geographical Information System (PVGIS) <http://re.jrc.ec.europa.eu/pvgis/> • European Solar Days: Summary Report http://www.solardays.eu/fileadmin/ESD_files/documents/Reports/Summary_report_2009.pdf • Hoffmann, W: The role of PV solar electricity to power the 21st century's global prime energy demand http://iopscience.iop.org/1755-1315/8/1/012007/pdf/1755-1315_8_1_012007.pdf • IEA: Solar PV roadmap targets http://www.iea.org/papers/2009/PV_roadmap_targets_viewing.pdf • IEA: Urban Photovoltaic Electricity Policies http://www.iea-pvps.org/products/download/rep10_07.pdf • NASA: Surface meteorology and Solar Energy <http://eosweb.larc.nasa.gov/sse/> • REEEP: Energy statistic <http://www.reeep.org/126/energy-statistics.htm> • SF Environment: San Francisco Solar Map <http://sf.solarmap.org/> • Solar America Cities partnership <http://www.solaramericacities.energy.gov/> • WWF: Copenhagen Declaration for a Low Carbon City Development <http://www.climatesolver.org/blog/?p=9>