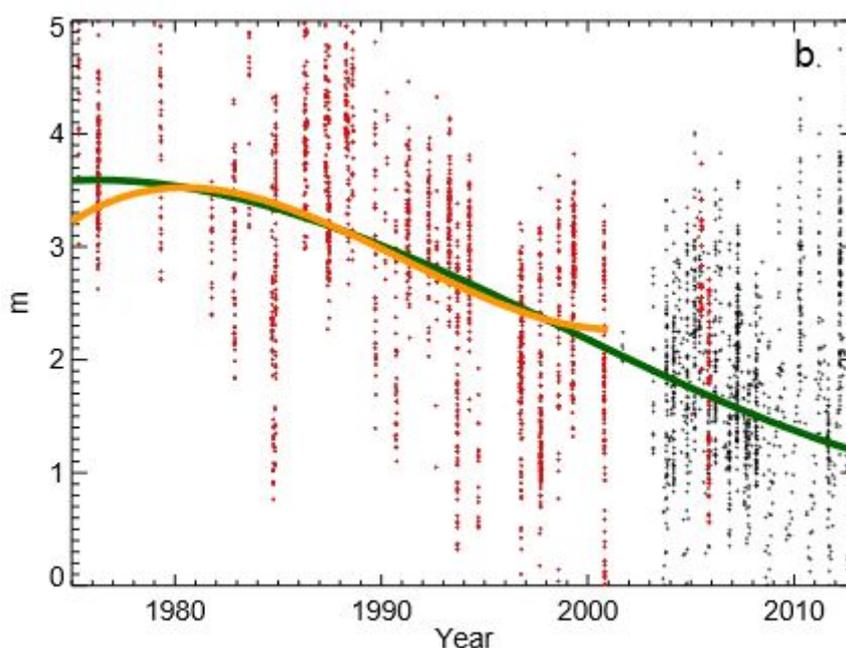




“Energy transition only plan to address climate change”

March 26, 2015. [Arctic Death Spiral: Sea Ice Extent Hits Record Winter Low As Thickness Collapses](#) by Joe Romm, Think Progress. “Arctic sea ice has been in a virtual death spiral for over three decades now with serious implications for extreme weather, sea level rise, and permafrost melt. Not only has the surface area or extent of sea ice declined sharply, but so has the ice thickness during the summer minimum (when the melt season ends in September) — dropping a remarkable 85 percent from 1975 to 2012, according to a recent study, “[Combined Arctic ice observations show decades of loss](#). NASA explains what happened in this short video: [Arctic Sea Ice Sets New Record Winter Low](#) (March 19, 2015).”



*The average annual sea ice thickness, in meters, for the central Arctic Ocean.
The green line is the long-term trend. Credit: [University of Washington](#)*

March 26, 2015. [Antarctica’s Icy ‘Doorstops’ Thin; Rising Seas At Risk](#) by Andrea Thompson, Climate Central. Giant doorstops of ice are melting away. “The ice shelves—some of which are larger than California and tens to hundreds of yards thick—are the linchpins of the Antarctic ice sheet system, holding back the millions of cubic miles of ice contained in the glaciers that flow into them, like doorstops. As the ice sheets thin, the massive rivers of ice behind them can surge forward into the sea.”

March 23, 2015. [Global Warming Is Slowing Ocean Currents](#). “The gradual but accelerating melting of the Greenland ice-sheet, caused by man-made global warming, is a possible major contributor to the slowdown. Further weakening could impact marine ecosystems and sea level as well as weather systems in the US and Europe.”

March 18, 2015. [Final copy-edited version of Intergovernmental Panel on Climate Change \(IPCC\) Fifth Assessment Synthesis Report \(AR5\) posted online](#). “Written by over 800 scientists from 80 countries, and assessing over 30,000 scientific papers, the Fifth Assessment Report **tells policymakers what the scientific community knows about the scientific basis of climate**

change, its impacts and future risks, and options for adaptation and mitigation. The key findings of the Synthesis Report, initially released on 2 November 2014, are:

- **Human influence on the climate system is clear;**
- **The more we disrupt our climate, the more we risk severe, pervasive and irreversible impacts; and**
- **We have the means to limit climate change and build a more prosperous, sustainable future.”**

March 13, 2015. [Global energy-related emissions of carbon dioxide stalled in 2014](#). Preliminary IEA data point to **emissions decoupling from economic growth for the first time in 40 years**.

“**Global emissions of carbon dioxide stood at 32.3 billion tonnes in 2014, unchanged from the preceding year**. The IEA data suggest that efforts to mitigate climate change may be having a more pronounced effect on emissions than had previously been thought. **The IEA attributes the halt in emissions growth to changing patterns of energy consumption in China and OECD countries**. In China, 2014 saw greater generation of electricity from renewable sources, such as hydropower, solar and wind, and less burning of coal. In OECD economies, recent efforts to promote more sustainable growth – including greater energy efficiency and more renewable energy – are producing the desired effect of decoupling economic growth from greenhouse gas emissions. "This is both a very welcome surprise and a significant one," added IEA Chief Economist Fatih Birol. "It provides much-needed **momentum to negotiators preparing to forge a global climate deal in Paris in December: for the first time, greenhouse gas emissions are decoupling from economic growth**." In the 40 years in which the IEA has been collecting data on carbon dioxide emissions, there have only been three times in which emissions have stood still or fallen compared to the previous year, and all were associated with global economic weakness: the early 1980's; 1992 and 2009. In 2014, however, the global economy expanded by 3%. **The latest data on emissions are indeed encouraging, but this is no time for complacency – and certainly not the time to use this positive news as an excuse to stall further action.**”

March 10, 2015. [Model study: CO2 drives intensity of droughts says scientists](#). “A new study suggests that increases in atmospheric CO2 could intensify extreme droughts in tropical and subtropical regions -- such as Australia, the southwest and central United States, and southern Amazonia -- at much a faster rate than previously anticipated.”

March 5, 2015. [CO2 Levels for February Eclipsed Prehistoric Highs](#). Global warming is headed back to the future as the CO2 level reaches a new high by David Biello , Scientific American. “Homo sapiens sapiens—that’s us—has subsisted for at least 200,000 years on a planet that has oscillated between 170 and 280 ppm, according to records preserved in air bubbles trapped in ice. Now our species has burned enough fossil fuels and cut down enough trees to push CO2 to 400 ppm—and soon beyond (...) Partially as a result of this atmospheric change, scientists have proposed that the world has entered a new geologic epoch, dubbed the Anthropocene and marked by this climate shift, among other indicators.”

February 25, 2015. [Carbon dioxide's contribution to greenhouse effect monitored in real time](#). “Scientists in the US have made the first direct measurement of the increase in the greenhouse effect caused by rising carbon-dioxide levels in the atmosphere. “**Numerous studies show rising atmospheric carbon-dioxide concentrations, but our study provides that critical link between those concentrations and the addition of energy to the Earth system, or the greenhouse effect.**” The results agree with radiative-forcing values calculated using CarbonTracker 2011, which is a measurement and modelling system that provides carbon-dioxide concentrations at a regional level. This means the **measurements back up predictions that the greenhouse effect is becoming more significant as a result of increased carbon-dioxide emissions from human activities** such as the burning of fossil fuels. The results also suggest that current climate models are doing a good job of describing the impact of carbon dioxide on the Earth's climate.”

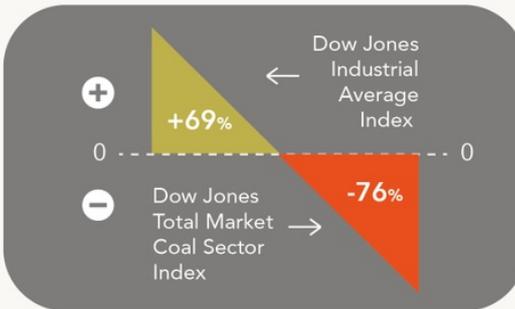
Fossil fuels structural change

March 23, 2015. [The US coal crash: Evidence for Structural Change](#) by Carbon Tracker Initiative. [US coal crash serves as a warning to investors betting on carbon](#). "The market for thermal coal is in structural decline in the United States. Squeezed out by an abundance of cheap shale gas and ever tightening pollution laws, it may be a harbinger of things to come for other fossil fuel markets globally. The slump in coal prices has driven at least two dozen coal companies into

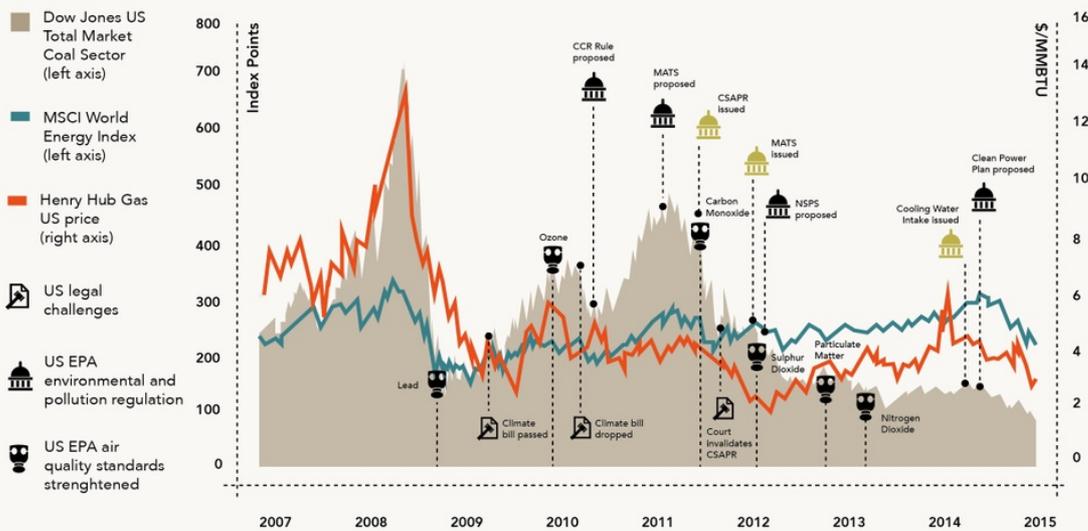
Waiting for an upturn in the coal markets that never came



Index comparison over the period 2009-2014



Many factors dampening demand in play

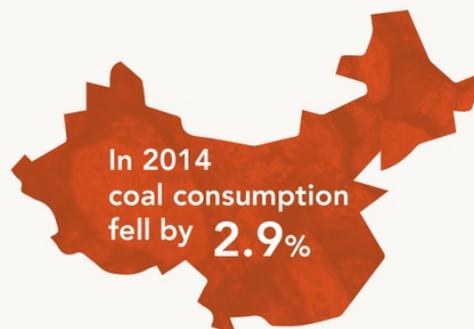


It is a structural shift

The level of US power generation remained the same between 2005 and 2013, but the share of energy sources used for generation have changed:



What about China?



Source: The US Coal Crash. Evidence for Structural Change, Carbon Tracker, March 2015

bankruptcy in the last three years alone. Many companies have lost 80 percent of their share value in the same period. We've known for decades that coal posed serious health and environmental risks, but now coal has also become an investment risk as countries take serious actions to clear their air and protect the climate. The financial think-tank says **the fate of US coal should serve as a warning to investors in other fossil fuel markets worldwide** who fail to prudently read a structural shift away from hydrocarbons and blindly continue to invest in assets that are increasingly in danger of becoming stranded. The coal case study is insightful because it shows **how one of the biggest and most advanced economies in the world can decouple growth from coal-based power in a short space of time**. It also highlights how domestic policy initiatives and seismic energy market shifts can quickly conspire to derail a once flourishing business model, even without a global climate deal, or federal carbon price."

March 24, 2015. [Beijing to Shut All Major Coal Power Plants to Cut Pollution](#) by Bloomberg News. "Beijing, where pollution averaged more than twice China's national standard last year, will close the last of its four major coal-fired power plants next year. The facilities will be replaced by four gas-fired stations with capacity to supply 2.6 times more electricity than the coal plants. **The closures are part of a broader trend in China, which is the world's biggest carbon emitter.** Facing pressure at home and abroad, policy makers are racing to address the environmental damage seen as a byproduct of breakneck economic growth. Nationally, China planned to close more than 2,000 smaller coal mines from 2013 to the end of this year, **Coal is the most carbon-intensive fossil fuel and the leading source of carbon-dioxide emissions. The nation's emissions of carbon dioxide fell 2 percent last year from 2013, the first decline since 2001**, signaling that efforts to control pollution are gaining traction."



*Images from "Under the Dome" documentary by Chai Jing.
"This photos show each day of 2014 in Beijing. 175 were polluted."*

March 23, 2015. [China's Top Meteorologist: 'Serious Threat' Of Climate Change Could Have 'Huge Impacts'](#) by Ari Phillips, Climate Progress. "It's World Meteorological Day and China's top meteorologist is worried about climate change. Zheng Guoguang, chief of China's Meteorological Administration, made an unusually frank and straightforward admission about the "huge impact" that climate change could have on the country. Zheng told that rising temperatures would reduce crop yields, lead to "ecological degradation" and create unstable river flows that threaten major hydropower projects. "As the world warms, risks of climate change and climate disasters to China could become more grave," Zheng said, also noting that temperature increases in mainland China over the last 100 years have exceeded global averages. **China and the U.S. combined account for about 45 percent of global greenhouse gas emissions.**"

context=

March 6, 2015. [China Blocks Web Access to 'Under the Dome' Documentary on Pollution](#) by Edward Wong, New York Times. "**Under the Dome**," a searing documentary about China's catastrophic air pollution, had hundreds of millions of views on Chinese websites within days of its release one week ago. The country's new environment minister compared it to "Silent Spring," the landmark 1962 book that energized the environmental movement in the

United States. Domestic and foreign journalists clamored to interview the filmmaker Chai Jing, a famous former television reporter, though she remained silent. Then, the momentum over the video came to an abrupt halt, as major Chinese video websites deleted it under orders from the Communist Party's central propaganda department."

March 19, 2015. U.S. [Leading by Example on Climate Change: Our New Federal Sustainability Plan](#), The White House. "Late last year, in an historic joint announcement with China, President Obama set an ambitious goal for reducing the greenhouse gas emissions driving climate change – a clear sign that the United States' commitment to leadership on climate change at home and abroad is stronger than ever. In the latest effort to continue that push, this morning, President Obama signed an executive order that will help us **stay on track to meet the new target pledged in China and ensure that the federal government leads by example as the United States** moves boldly to reduce greenhouse gas emissions while boosting clean energy. **This new sustainability plan for the next decade directs federal agencies to cut their greenhouse gas emissions by 40 percent by 2025.**"

March 9, 2015. [Empowering Women Through Energy Services](#) by Ho Chi-ping, Women of China. "**In China, by 2007, a total of 26.5 million biogas digesters were in operation providing biogas energy to 40 million households and benefiting 155 million people or about one-third of the rural population, 70 percent of which were women.** Through the use of biogas, people's living conditions and the environment have improved, forests are protected and the labor force has more time for agricultural production. **The lives of women had been totally transformed by the biogas program before the electric grid could provide them with modern energy.**"

2014. "**The coal renaissance in Europe was only a dream.** As announced in former [OECD/IEA Medium-Term Coal Market Reports](#), coal use increase in Europe in recent years was a temporary spike largely due to low coal and carbon dioxide (CO₂) prices, high gas prices, and the partial shutdown of German nuclear plants. However, **after 2012, coal demand began to decline due to moderate economic growth, energy efficiency gains, increasing renewable energy sources and coal plant retirements.**" Coal imports to Spain and Italy decreased strongly. Spain's coal imports plunged ~40% and Italy's decreased ~18% (2013).

Context=

January, 2015. [The Carbon Bubble](#), BioGAS+ Newsletter. p. 3-5. "Saudi Arabia sees End of Oil Age."

Berlin Energy Transition Dialogue – towards a global Energiewende

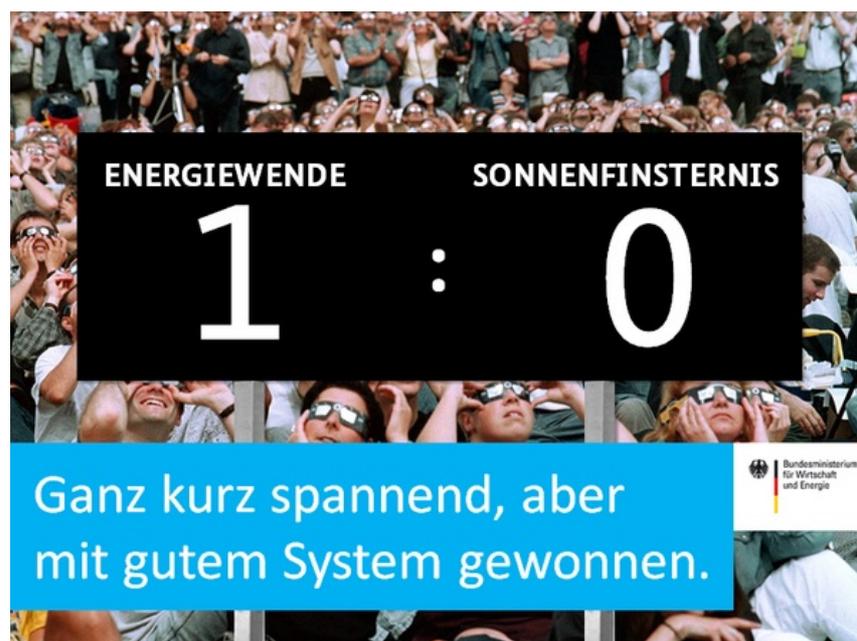
March 26-27, 2015. [International Conference](#) in Berlin, Federal Foreign Office. "At the start of the 21st century, the world faces a myriad of challenges and new opportunities. Many of them relate directly or indirectly to energy. International networking and innovation in the renewable sector enables people in more and more regions of the world to partake in industrial growth in a sustainable manner. This growth however can only be ensured with a reliable and cost-effective supply of affordable renewable energy. Climate change and the scarcity of resources make it clear that sustainable ways have to be found to cover the growing demand for energy. Around the world, many countries have already initiated energy programmes with the goal of expanding the share of regenerative energy sources and increasing energy efficiency. With the Energiewende, or energy transition, Germany has set ambitious targets. But **the challenges we face in the process are global, for the journey to the future of sustainable energy can only be travelled in close international cooperation. Germany's Federal Government is initiating an international dialogue to tackle these challenges on an industrial and system-wide scale.** As a pivotal

international summit on new energy policy, this conference will provide an excellent platform to meet and share your experience with the most important energy sector decision makers from all over the world. It will stimulate a dialogue that will help us learn from proven solutions and best practices worldwide.”

The German Energy Transition: The Internet of Things, Zero Marginal Cost Renewable Energy, and the Third Industrial Revolution By Jeremy Rifkin. “Germany is embarking on a bold new journey to transform its energy regime and usher-in a new economic paradigm. To grasp the enormity of the economic change taking place, we need to understand the technological forces that have given rise to new economic systems throughout history. Every great economic paradigm requires three elements, each of which interacts with the other to enable the system to operate as a whole: new communication technologies to more efficiently manage economic activity; new sources of energy to more efficiently power economic activity; and new modes of transportation to more efficiently move economic activity. In the 19th century, steam-powered printing and the telegraph, abundant coal, and locomotives on national rail systems gave rise to the First Industrial Revolution. In the 20th Century, centralized electricity, the telephone, radio and television, cheap oil, and internal combustion vehicles on national road systems converged to create an infrastructure for the Second Industrial Revolution. Today, Germany is laying the ground work for the Third Industrial Revolution. The digitalized Communication Internet is converging with a digitalized renewable Energy Internet, and a digitalized automated Transportation and Logistics Internet, to create a super-Internet of Things (...) In summary, the scale up of a smart digitalized Internet of Things infrastructure across the European Union, and its partnership regions, will generate new business opportunities in both the market economy and the Sharing Economy, dramatically increase productivity, employ millions of people, and create an ecologically oriented post-carbon society. The employment of millions of workers will also stimulate purchasing power and generate new business opportunities and additional employment to serve increased consumer demand. Infrastructure investment always creates a multiplier effect that reverberates across the economy as a whole.”

Context=

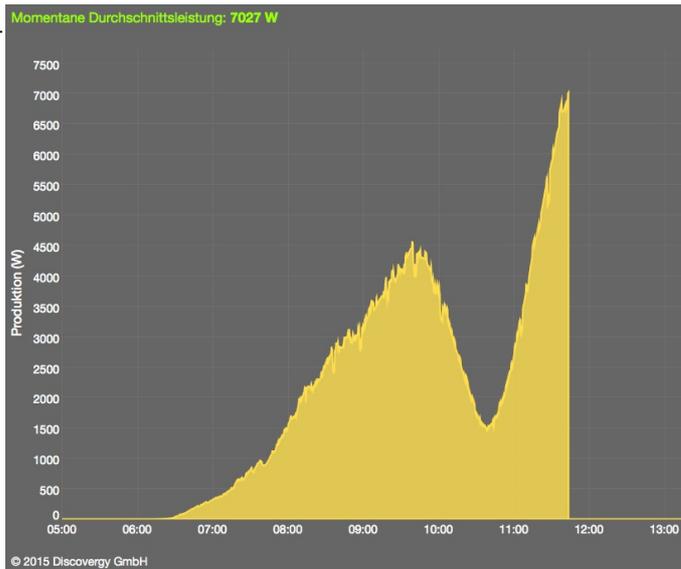
November, 2014. **Effects of the Biogas Policy Changes in Germany: Adaptation to New Requirements**. BioGAS+ Newsletter. p. 5-7. “Biogas on the edge.”



Energiewende: 1 Solar eclipse: 0

Eclipse was a glimpse into the future of our power systems

March 20, 2015. **European power grids keep lights on though solar eclipse** by Vera Eckert, Reuters. “**Electrical grids in Europe succeeded in managing the unprecedented disruption to solar power** from Friday's 2-1/2-hour eclipse that brought sudden, massive drops in supply. Germany, Europe's leading economy and boasting the world's biggest solar-powered installations, was at the heart of the event. **They were able to draw on alternative power sources including coal, gas, biogas, nuclear and hydroelectric energy pumped from storage.** Grid spokespeople said control rooms were tense. ”



March 19, 2015. **Why People In Europe Are Worried About The Biggest Solar Eclipse In 15 Years** by Ari Phillips, Climate Progress. “On Friday morning, March 20, a solar eclipse will sweep across Europe. This time around, there is a new cause for concern: solar power. The eclipse will be most pronounced in Northern Europe, and the bulk of the apprehension is centered on Europe’s solar powerhouse: Germany. Germany is an unlikely solar leader, but a concerted national effort to go renewable has put it at the forefront of solar power development. Its 1.4 million solar energy systems account for around a quarter of the solar capacity installed on Earth and solar provides about seven percent of the country’s power. During 75 minutes in the mid-morning — when the sun’s power is normally accelerating — Germany will instead rapidly lose solar generation. The last time a solar eclipse of this magnitude happened in Europe was in 1999, when solar accounted for less than one percent of Germany’s power consumption. Since then, the amount of solar photovoltaic power installed in Europe has gone from a marginal amount to over 90 gigawatts. The Brussels-based European Network for Transmission System Operators for Electricity released a report last month stating that this is **the first time an eclipse is “expected to have a relevant impact on the secure operation of the European power system.”** he eclipse presents a **unique opportunity to study the way renewables interact with the grid as utilities around the world transition to a new, distributed, and renewable-reliant form of energy production.**”

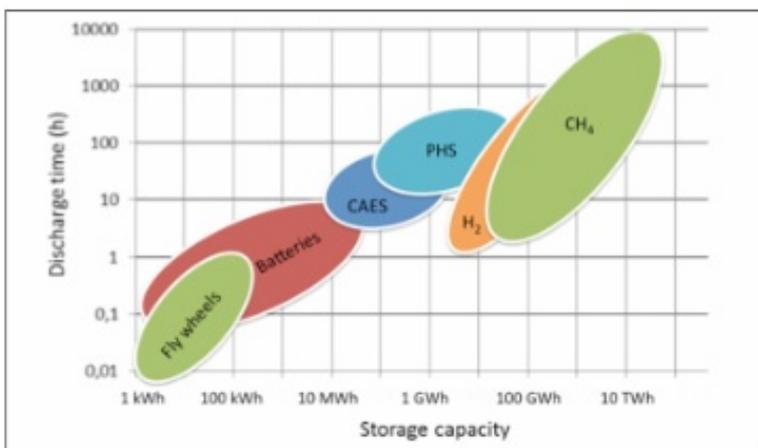


Figure 1: Comparison of various energy storage systems with respect to discharge time and storage capacity (modified from Specht et al., 2011).

2014. **A perspective on the potential role of biogas in smart energy grids.**

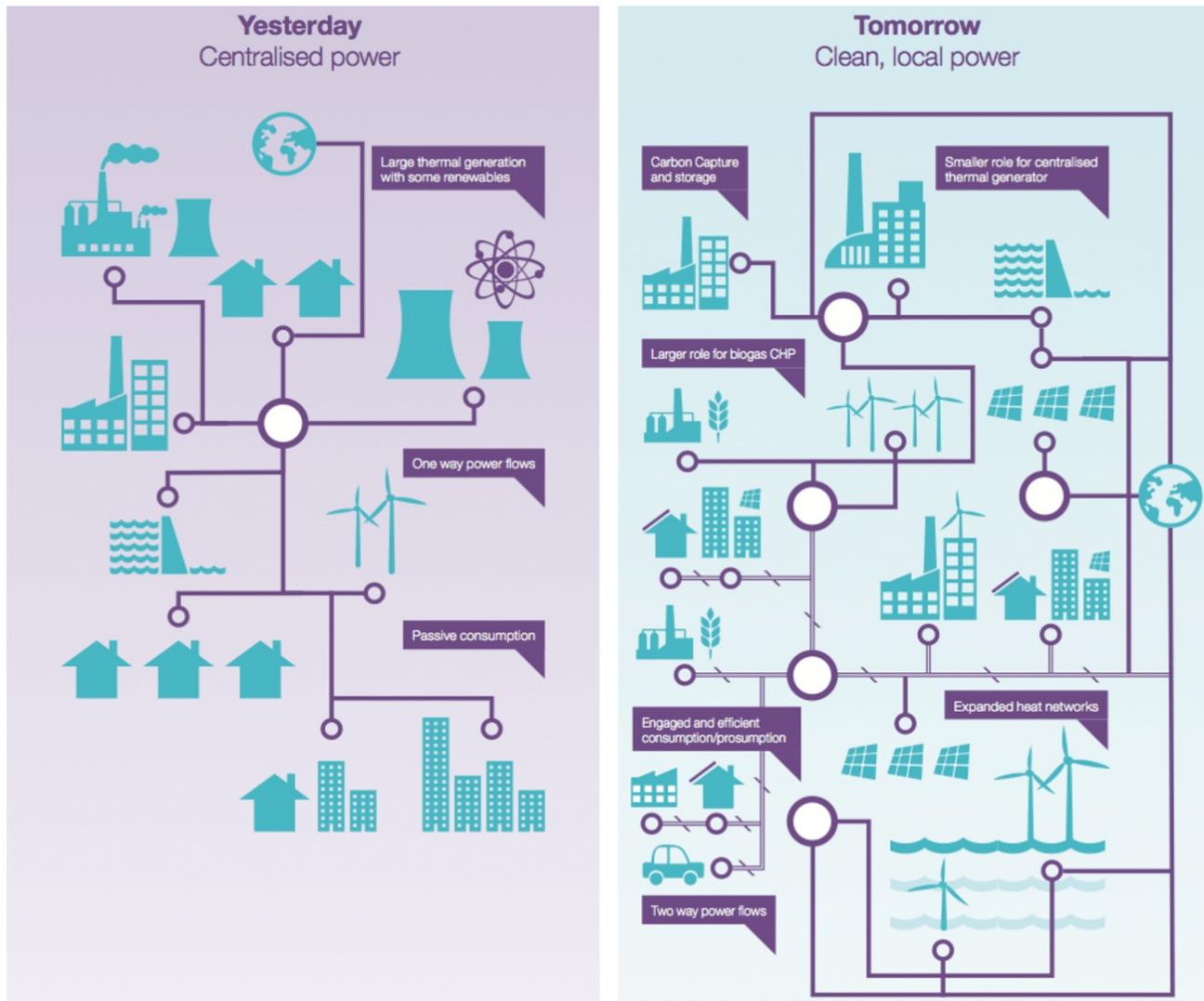
Report by IEA Bioenergy. “**Biogas systems can facilitate increased proportions of variable renewable electricity on the electricity grid** through use of two different technologies:

- Demand driven biogas systems which increase production of electricity from biogas facilities at times of high demand for electricity, or store biogas temporarily at times of low electricity demand.
- Power to gas systems when demand for electricity is less than supply of electricity to the electricity grid, allowing conversion of surplus electricity to gas.”

March, 2014. [Virtual Power Stations - A Boost for Renewables?](#) | Made in Germany (video). Virtual power plants represent a big hope for Germany's long-term energy plans. They connect **clusters of small-scale generators such as solar-power plants, wind turbines and biogas facilities to form one big one**. The resulting power station has the capacity of a small nuclear power facility -- and with it more market power.

Context=

January, 2015. [“Everyone knows the future is decentralized, right?”](#). BioGAS+ Newsletter. p. 14-16. “Decentralization. It happened in computing & telecoms. Now it's happening in energy.”



Citizens role: The energy transition to energy democracy

March, 2015. [The energy transition to energy democracy: Power to the people](#). Final results oriented report of the REScoop 20-20-20 Intelligent Energy Europe project. This project ran from the end of March 2012 until the end of March 2015. **“There are more than 2,400 renewable energy cooperatives (REScoops) in Europe at the beginning of 2015.** Hundreds of thousands of Europeans are united in REScoops to jointly invest in the energy transition from fossil and nuclear fuels to renewable energy and energy efficiency. There are many more Europeans at home who are also committed to realising this goal in their daily lives.”

Waste-biogas or crop-biogas?

March 3, 2015. **La méthanisation agricole ne tient pas ses promesses** par Marie-Josée Cougard, Les Echos. “Le rythme de création des méthaniseurs agricoles a fortement ralenti en France au vu des problèmes rencontrés. Cher (1,5 million d’euros en moyenne), compliqués, chronophages, d’une rentabilité aléatoire... Au nombre de 180 en France, les méthaniseurs agricoles ne tiennent pas leurs promesses. Les exploitants qui se sont lancés dans l’aventure sont déçus. Résultat, ceux qui projetaient de suivre hésitent ou renoncent. Une situation qui se reflète bien dans les chiffres. D’un taux de création de 70 méthaniseurs par an, on est tombé à 40 en 2014. Et si rien n’est fait pour relancer l’affaire, l’objectif de 1.000 méthaniseurs du ministère de l’Agriculture en 2020 et 1.500 en 2025 sera hors de portée (...) **Rien ne s’est passé en France comme en Allemagne. La clef de la réussite germanique est une simplicité qu’on ne veut pas répliquer en France. Les méthaniseurs allemands ont été conçus pour ne recevoir que des végétaux (maïs, betteraves), alors que, de ce côté-ci du Rhin, on y met des effluents d’élevage.** « *Le taux d’usure est nettement plus élevé, le réglage aussi et la rentabilité très variable* ». **Ainsi alimentés, les équipements français requièrent un suivi pouvant atteindre 5 heures par jour contre 2 heures en Allemagne.** Les agriculteurs craignent par-dessus tout un nouveau carcan réglementaire face à des situations diverses. Ils demandent de réduire les **délais de validation des dossiers (de 3 à 5 ans contre 1 an en Allemagne)** et d’augmenter à 20 centimes le prix de rachat du kilowatt (contre 18 aujourd’hui).”

March 3, 2015. **Waste-biogas "at least 10 times more effective" than crop-biogas for reducing GHG emissions**. “As we are reminded by every official communication relating to AD, the UK’s policy focus is clearly on increasing energy from waste through AD. **However, often waste-only digestion is not feasible.** Tariff degression has meant farm-waste plants are no longer financially viable because of low gas yields, and food-waste plants require some form of input continuity for process stability purposes. The obvious solution is introducing crop feedstock as part of the ‘diet’ - which when integrated into existing arable or livestock farming systems can offer multiple benefits and solve agronomic- and commercial-challenges. Integration is key to maximising these benefits – enhancing existing enterprises by improving yields, reducing pest/disease occurrence, optimising use of existing labour and machinery and avoiding ILUC, for example. Lucy Hopwood, NNFCC’s lead consultant for Bioenergy and AD, said: "This research illustrates the questionable environmental value when mono-cropping occurs and whole farming systems are changed. However, this approach is also likely to create - rather than solve - agronomic and commercial challenges, and is therefore an unlikely scenario in the UK." She added: "Comparing Miscanthus with maize for AD is unfair; the former is a long-term perennial crop leading to long-term land use change, and the latter is an annual arable crop which can be included as a break-crop in existing crop rotations to enhance subsequent crops." The imminent Sustainability Criteria that bioenergy facilities will need to comply with from this autumn is expected to enable closer monitoring of impacts and to indirectly control the use of crops in AD – allowing the emphasis to remain on



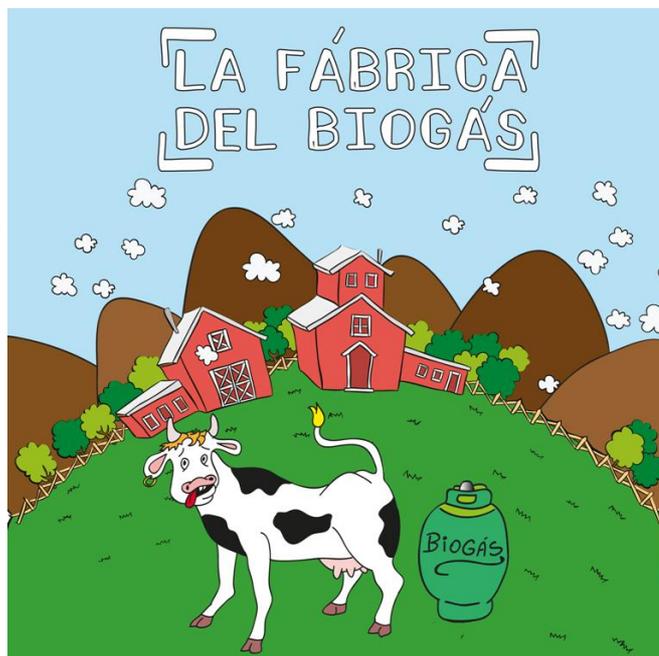
waste, but enabling the use of crops where they are agronomically, environmentally and economically beneficial.”

February 26, 2015. [Waste-biogas is at least ten times more effective than crop-biogas at reducing greenhouse gas emissions](#). “Researchers from Bangor University (UK) and the Thünen Institute (Germany) conclude that crop-biogas and liquid biofuels are at best inefficient options for greenhouse gas (GHG) mitigation, per hectare of land used and per £ public subsidy required. At worst these options could actually lead to higher global GHG emissions owing to indirect land use change caused by displacement of food production. In comparison, waste-biogas and Miscanthus (woody grass) heating pellets achieve at least ten times more GHG mitigation per tonne of dry matter biomass and per hectare of land used, respectively, leading to cost-effective GHG mitigation. Bio-electricity feed-in-tariffs (FiTs) are encouraging the use of crops to produce biogas in large scale anaerobic digestion plants, whilst mandatory biofuel blend targets are driving the production of liquid biofuels from food crops. There is concern that these policy measures do not target the most sustainable bioenergy options to reduce dependence on polluting fossil fuels, and to reduce GHG emissions that contribute to climate change. Dr David Styles, who led the research, commented: "Whilst subsidies are necessary to correct for market failure and develop vital renewable energy sources, it would seem sensible to link such subsidies with environmental sustainability criteria to ensure that they efficiently contribute to overall net public good. Our results highlight the importance of applying life cycle assessment to comprehensively evaluate the environmental sustainability of bioenergy options, capturing hotspots such as indirect land use change associated with food crop displacement, the climate effect of bio-methane leakage, and ammonia emissions arising from digestate storage and spreading.” [Styles, D., Gibbons, J., Williams, A.P., Dauber, J., Stichnothe, H., Urban, B., Chadwick, D., Jones, D.L., 2015. "[Consequential life cycle assessment of biogas, biofuel and biomass energy options within an arable crop rotation](#)." Global Change Biology Bioenergy]

Outreach

March 10, 2015. [PAR EXPLORA Los Lagos presenta cuento científico “La Fábrica del Biogás”](#). “La posibilidad de generar energía a partir de purines (desechos) de animales, es el tema central del nuevo cuento científico del PAR EXPLORA Los Lagos, coordinado por la Universidad de Los Lagos (Chile). Se trata de "La Fábrica del Biogás", una entretenida historia que relata las aventuras de un grupo de estudiantes pertenecientes a una escuela rural de la Región de Los Lagos. La historia de los alumnos Manuel, Javiera y Esteban, junto a su profesora, la tía Margarita, se centra en la asesoría que reciben por parte de Juan, un científico del Instituto de Investigaciones Agropecuarias (INIA), quien los instruye para poder producir biogás a partir de los desechos orgánicos de vaca. Una tecnología que podría ser masificada en los campos del sur de Chile. La autoría del cuento corresponde a Víctor Castañeda, mientras que la ilustración fue realizada por Marcelo Castañeda. El diseño estuvo a cargo de Eduardo Peralta y la asesoría científica la efectuó Josué Martínez-Lagos, Magister en Ciencias e Investigador de INIA Remehue”.

[Descargar el cuento](#).



March 9, 2015. **Survi-Ville** challenges you to imagine what London will look like in the future, and supports you to design structures and buildings which can respond to a changed environment. “Welcome to Survi-ville, a place we hoped would never exist. Once, the city thrived; but we outgrew this environment a long time ago. If the situation had been allowed to continue forever we would have happily carried on, unaware of the damage being caused. But then expiry, decline, fallout.



Survi-ville is a collaborative project between PUG and Ugly Duck (47/49) **showing us a world beyond climate change and economic collapse**. A prototype watchtower, biogas generator and public convenience sits atop a warehouse rooftop. Energy is created for the occupants below through the generator, the parachute inflating and deflating according to the quantities of gas within. Breathing, occasionally wheezing, a component as both generator for and barometer of the system it serves. Follow us as we embark on a month-long programme of events with the community. Local school children can speculate on how they will live in their future in educational workshops. A collection of activists, artists and architects will write, draw and perform. Finally, a spirited discussion will take place through online media about climate change, scarcity and architecture”



Methanisation pour les plus petits

Responsible Research and Innovation

March 20, 2015. [Can science be the cure if it's part of the cause?](#) by Melanie Smallman from UCL in London, the RRI Tools Hub coordinator for United Kingdom. **“It is time to ask whether science is helping create a more or less equal society”**

March 16, 2015. [“Responsible Innovation: A European Agenda?”](#) Conference on 24-25 August 2015, The Hague. Call for papers is open.

March 11, 2015. **#RRI as seen from the European Commission** <http://www.sisnetwork.eu/rri/> and from the RRI Tools project: <http://www.rri-tools.eu/about-rri>

March 4, 2015. [The ResAGorA case studies on RRI now available on their website](#) “The major goal of the Res-AGorA project (*Responsible Research and Innovation in a Distributed Anticipatory Governance Frame. A Constructive Socio-normative Approach*) is to **develop a normative and comprehensive governance framework for Responsible Research and Innovation (RRI)**. This will be a contribution to the EU ambition of becoming a genuine Innovation Union by 2020 striving for excellent science, a competitive industry and a better society without compromising on sustainability goals as well as ethically acceptable and socially desirable conditions. The goal of the Res-AGorA project will be achieved through extensive research about existing RRI governance across different scientific technological areas, continuous monitoring of RRI trends and developments in selected countries, and constructive negotiations and deliberation between key stakeholders. This comprehensive empirical work will be the building blocks of the creation of a governance framework for RRI. Res-AGorA consists of 8 European partners from universities and offices for science and technology. The project will be coordinated by Fraunhofer-Gesellschaft, the largest organization for applied research in Europe. The project is financed by the EU and runs over a three-year period starting February 2013. **Res-AGorA is one out of five projects specifically focusing on RRI in EU’s 7th framework programme. The others are called [GREAT](#), [PROGRESS](#), [RESPONSIBILITY](#) and [Responsible Industry](#).**”

March 4, 2015. [Social Responsibility in Science: A Preliminary Inquiry by AAAS](#). “The notion that scientists have a responsibility to society that goes beyond their responsibilities to the profession is long-standing. Yet, there is no consensus on what the content and scope of social responsibilities are or ought to be. While there is a growing literature concerning the issues encapsulated by the phrase “social responsibility of scientists,” a review of that literature reveals many and sometimes competing views, and the lack of data to inform the discussion.”

March, 2015. [The \(nano\) entrepreneur's dilemma](#). Emerging technologies need to be developed responsibly if their benefits are to outweigh any potential risks. Yet do entrepreneurs really have the luxury of grappling with futures consequences from the get-go, asks Andrew D. Maynard, Nature Nanotechnology

February 16, 2015. How to advance RRI. [Responsible Innovation : what now?](#) Consultation for Liu Zhanxiong by Eloïse Szmatala. “ [LZ]: How can we make the RI come true ? [SE] That’s the most difficult question! **First it’s important to raise awareness and concern about RI, with research, case studies and success stories.** For now there are way too few people who know about RI. **Then we have to gather people who know about RI and want to be involved in it in an active community. And finally, we have to convince stakeholders to come on board and try RI:** governments, companies, research centres, NGOs, etc. This echoes all the conclusions from studies conducted on the subject: strong multi-stakeholder partnerships will be key in the success of RI.”