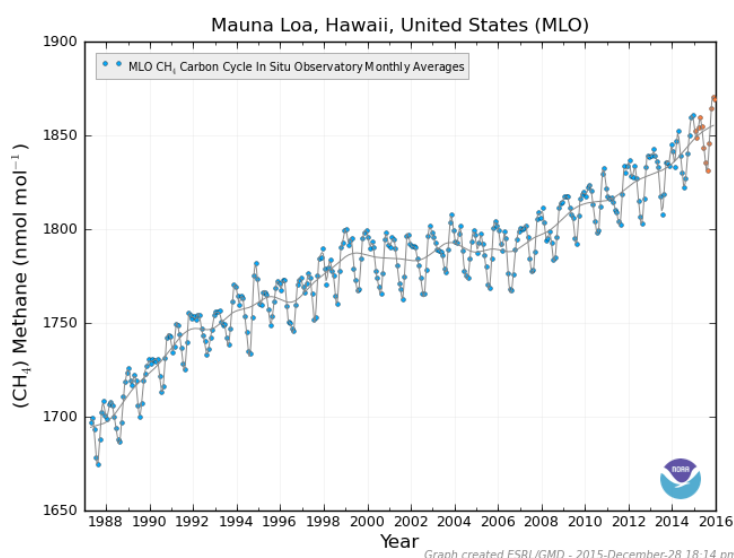




Beyond climate change mitigation. Bioenergy is the only renewable source that could act on the carbon cycle

May 17, 2016. **A \$3.3 trillion industry must change drastically if we want to save Earth — and it's not fossil fuels** by Sarah Kramer, Tech Insider. “If the world is going to fight climate change, it's not just fossil fuels we need to worry about. According to a new study, we'll have to get very clever about our food supply. In a [study](#) published in the journal *Global Change Biology*, scientists suggest that greenhouse gases emitted by global agriculture will have to be cut — and drastically, perhaps five times as much as current reductions call for. This marks the **first calculation of precisely how much the agricultural sector will need to reduce its output of potent heat-trapping gases like methane** (which is far worse than carbon dioxide) in order to satisfy the Paris Agreement on climate change (...) Wollenberg and her team studied greenhouse gases that stem from agriculture as well as natural sources. One was **methane**, which **traps heat about 25 times better than carbon dioxide**, and livestock like cows and pigs emit heavily as a result of digestive processes and manure storage methods. The team also looked at a **nitrous oxide — a whopping 200 to 300 times more potent than CO₂** and also generated by agriculture. Wollenberg and her colleagues found that, given today's rate of agricultural growth, current plans will cut potent non-carbon dioxide emissions by only 21% to 40% of what's required in order to keep global warming under 2 deg C. Put another way, **the \$3.3 trillion global agriculture industry must find a way to cut more than twice as much methane, nitrous oxide, and other emissions**. “Mitigating those emissions represent a potential to mitigate more quickly,” study co-author and agroecologist Meryl Richards told. **Agriculture contributes 56% of the world's nitrous oxide and methane emissions**, according to Richards. So, keeping those gases out of the atmosphere could do a lot to slow the pace of warming.”

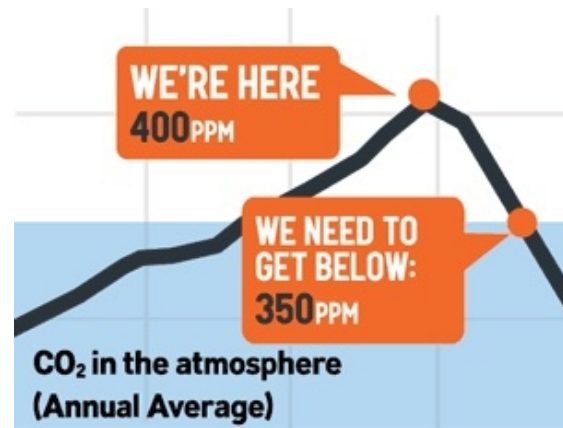
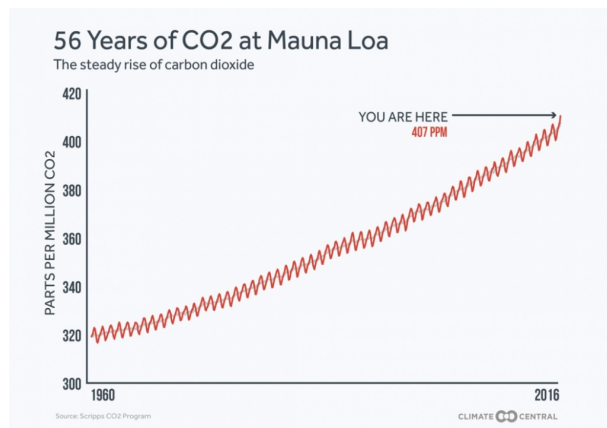


Methane concentrations in atmosphere up to 2015. NOAA

May 17, 2016. **Reducing emissions from agriculture to meet the 2°C target**. “More than 100 countries pledged to reduce agricultural greenhouse gas (GHG) emissions (Richards et al., 2015a) in the 2015 Paris Agreement of the United Nations Framework Convention on Climate Change. Yet technical information about how much mitigation is needed in the sector versus how much is feasible remains poor. We identify a preliminary global target for reducing emissions from

agriculture of ~1 GtCO₂e/yr by 2030 to limit warming in 2100 to 2°C above pre-industrial levels. Yet **plausible agricultural development pathways with mitigation co-benefits deliver only 21 to 40% of needed mitigation**. The target indicates that more transformative technical and policy options will be needed, such as methane inhibitors and finance for new practices. A more comprehensive target for the 2°C limit should be developed to include soil carbon and agriculture-related mitigation options. Excluding agricultural emissions from mitigation targets and plans will increase the cost of mitigation in other sectors or reduce the feasibility of meeting the 2°C limit.”

May 16, 2016. **Is it time to give up on the 350 ppm goal? We're now consistently above 400** by Andrea Thompson, cross-posted from Climate Central / Grist. “Atmospheric carbon dioxide levels are monitored at stations around the world, providing records of the mark humans are leaving on the planet. Charles Keeling, began the recordings at Mauna Loa in 1958, revealing not only the annual wiggles created by the seasonal growth and death of vegetation, but the steady rise in CO₂ from year to year. The resulting graph, dubbed the Keeling Curve in his honor, became an icon of climate science.

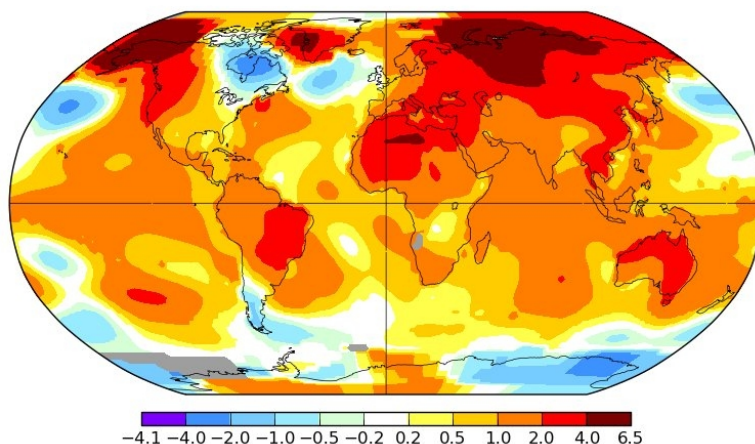


“If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO₂ will need to be reduced from [current levels] to at most 350 ppm.”

[Dr. James Hansen](#), former head of the Goddard Institute for Space Studies

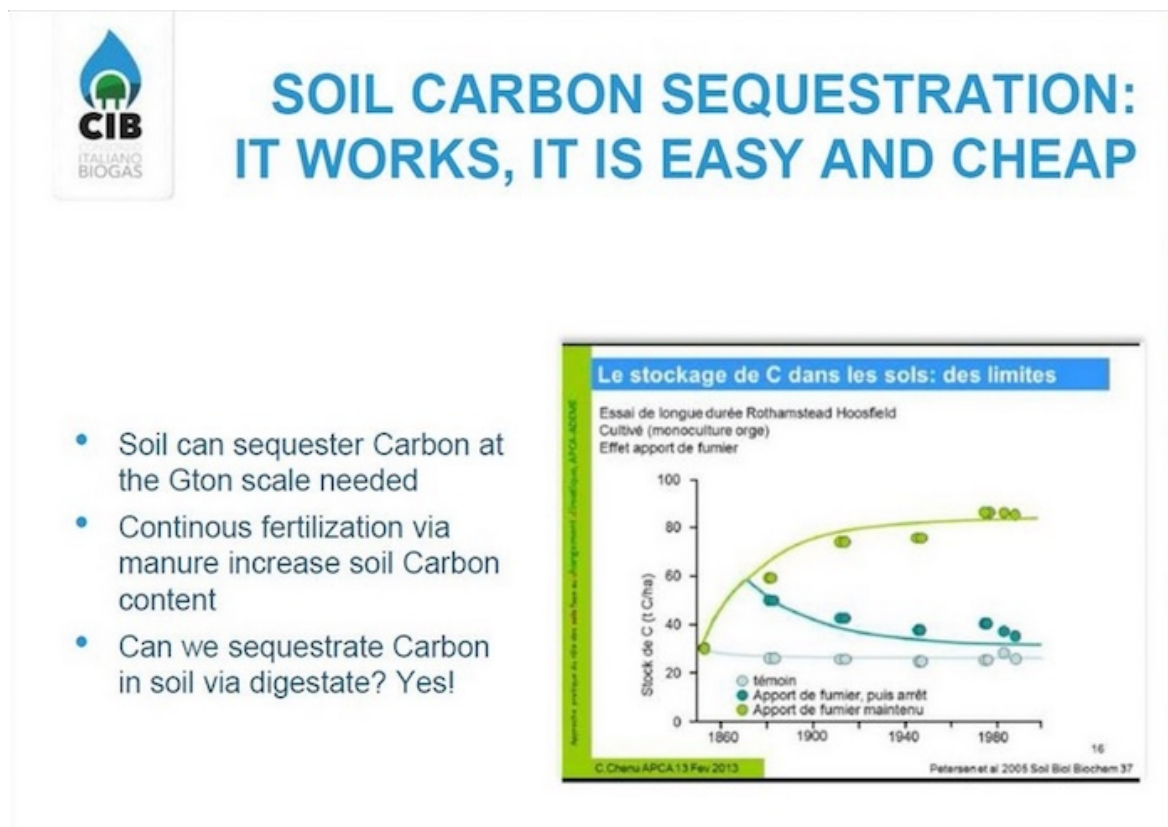
And while that benchmark is somewhat symbolic — the excess heat trapped by 400 ppm [parts per million measure the ratio of carbon dioxide molecules to all of the other molecules in the atmosphere] versus 399 is small — it serves as an important psychological milestone, Keeling said, **a way to mark just how much humans have emitted into the atmosphere. And with levels this year already nearing 410 ppm, “you realize how fast this is all going.”**

April 2016 L-OTI(°C) Anomaly vs 1951-1980 1.11



Warmest April on record – and the seventh month in a row to have broken global temperature records and all but assure 2016 will be hottest year on record

May 2016. **Biogasdoneright® Anaerobic digestion and soil carbon sequestration. A sustainable, low cost, reliable and win win BECCS solution.** A recent Google engineers article stirred the debate in the renewable energy sector: “Suppose for a moment that it had achieved the most extraordinary success possible, and that we had found cheap renewable energy technologies that could gradually replace all the world’s coal plants—a situation roughly equivalent to the energy innovation study’s best-case scenario. Even if that dream had come to pass, it still wouldn’t have solved climate change. This realization was frankly shocking: not only had RE<C failed to reach its goal of creating energy cheaper than coal, but that goal had not been ambitious enough to reverse climate change.” This article proposes **an inexpensive, widely-proven and widely-applicable means of reversing climate change using bioenergy and associated carbon capture and storage.** We propose a systemic approach to agriculture, where we obtain food and feed and energy/biomaterials from the same hectare of land already cultivated or set aside. We achieve this target via a combination of already existing and new farming techniques and while we photosynthesize more carbon in the crops we sequester CO₂ from the atmosphere and we store it in the soil, making it richer in organic matter and thus more fertile. **We call these techniques biogasdoneright® since the whole farm activity is designed around the anaerobic digester (...)** A carbon negative agriculture able to produce for more markets food, feed and energy and biomaterials is maybe the best answer to the dilemma highlighted by the google engineers (...) Bioenergy is the only renewable source that could act, at the scale that we need on the carbon cycle, as the Keeling curve “swing” every summer is showing us.”



May 2, 2016. **The US Is Finally Taking on Methane, Climate Change's** by Hidden Villain by Emma Foehringer Merchant, Wired. “While it only accounts for 11 percent of greenhouse gas emissions in the US, this chemical packs a potent dose of warming, 84 times more effective than CO₂ at absorbing heat. **Methane** breaks down more quickly and poses fewer direct risks to human health. But **it’s already contributed to more than 30 percent of the climate change the planet has experienced.**”

Cities and Biogas in Energy Transition

May 20, 2016. **The importance of the municipal level in the transition to biogas** by Simon Lefebvre, Biogas World. “As more and more cities around the world are transiting to renewable energy or are considering doing so, this **municipal trend towards energy transition cannot be ignored**. No surprise it is at the municipal level that a stronger, more concrete and more widespread transition is observed. Indeed, the functional structure of a city is very complex in terms of direct and recurring services provided to the population considering the logistics of a dispersed, heterogeneous and very large population. **The importance of the municipal level in the transition to biogas appears obvious.** (...) “The anaerobic digestion of organic municipal solid waste (OMSW) appears natural and logical to implant among **an effective circular municipal management**. Not only the production of biogas significantly reduces the amount of residual waste ending in landfills, it also optimizes the revaluation of OMSW by producing clean, renewable and carbon-neutral energy that can be used for transportation, heating and to produce electricity. In addition, anaerobic digestion generates no waste, other than the potential contaminants present in the treated OMSW, and what results apart from the biogas produced is a solid or liquid digestate which is then used as fertilizing material and compares to the soil obtained from compost. In short, anaerobic digestion is an optimized way to recycle OMSW in order to minimize the waste of its rich potential while reducing the amount of final residual waste.”

May 18, 2016. **How Odisha's 'Smart Nanogrid' village is becoming energy efficient**. “Situated at Chhotkei village in Angul district of Odisha, SunMoksha's **Smart Nanogrid is India's first 'smart grid' village**. The company has invested years of effort to develop a holistic solution with a 'systems' approach to address the challenges of energy access. Dr Ashok Das of SunMoksha says, “Our technical intervention, Smart Nanogrid™, addresses the gaps and requirements (in energy access). The word “Nano” signifies small, modular, and affordable for the masses. Uninterrupted access to energy and digital connectivity is paramount in our solution.” The Smart Nanogrid™ Village consists of **a hybrid power generation unit from locally available renewable sources (solar, wind, biomass, biogas, pico-hydro, etc.) or grid power**. It's a distribution grid to make power available to homes, streets, and most importantly, to farms and micro-enterprises. It also supports a complete automation system for managing the microgrid operations. This brings energy-sufficiency to the village, and eliminates dependency on the grid. Das adds, “Our solutions are applicable to both electrified and un-electrified villages. The key technical intervention is the IoT (Internet of Things)/IT-enabled Smart Nanogrid™ which ensures reliable and predictable power supply through demand and supply management and citizen-centric power services.” (...) A special portal has been created at www.smartnanogrid.net to network all such nanogrids for not only real time monitoring of the projects, but also for information exchange and cross-learning.”

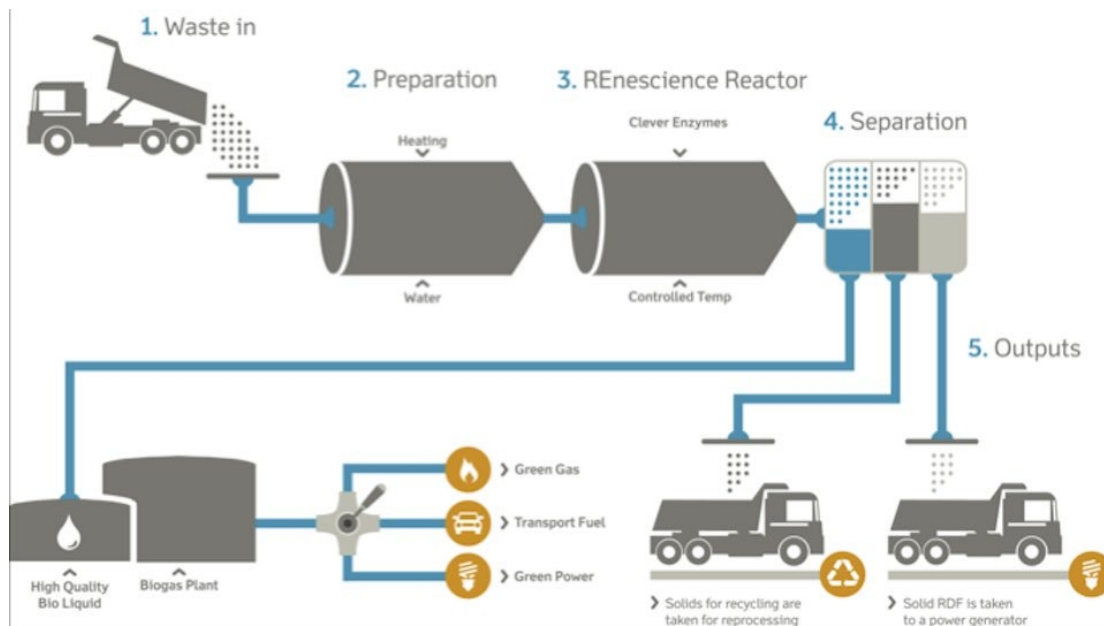
May 16, 2016. **Waste to energy: how London is turning its own lights on** by Taylor Heyman, Power Technology. “The potential of waste to energy power plants has started to make its mark in the UK with a string of new builds now diverting waste from landfill. So how does energy recovery from waste work, and how far has its star risen? For a city as important to the UK and world economy as London, it is essential to keep the lights on and business booming for its 8.4m inhabitants. Some of these people and companies are helping to power their own homes simply by putting the bins out on a Monday morning (...) Instead of burning the fuel, microorganisms work at a low temperature to convert the waste into carbon-dioxide / methane bio-gas, which can then be used to generate electricity and heat. The by-product is digestate which can be used as a natural fertiliser. **Anaerobic digestion plants are generally much smaller than incineration or ATT plants. The TEG Biogas anaerobic digestion plant in Dagenham came online in 2014**, having received investment from the Green Investment Bank. It can process 50,000 tonnes of waste annually, providing 1.4MW of power to the grid. The residual heat is also used by local businesses

in the Dagenham Dock area that has been designated for sustainable industries (...) One million tonnes of food is wasted in London every year, and anaerobic digestion could help us to do something positive with this waste.”



Capable of recycling 160,000 tonnes of food waste each year, ReFood has started construction work on its brand new £32m anaerobic digestion plant in [Dagenham](#).

May 15, 2016. **Bio-energy direct from raw waste – a world first.** “The Northwich bio-energy plant will be the first in the world to chemically **process unsorted household waste, without prior treatment, using enzymes**. It will be an independent merchant facility, treating commercial waste, municipal waste and fines that are supplied from existing intermediary waste transfer and treatment sites. **The necessary new technology, called RENescience, has been developed by Dong Energy** and has been under test at a demonstration plant in Copenhagen since 2009. In January 2014, following 10 000 hours of testing, it was made commercially available. The main advantage of such a plant, says its maker, is that a much larger proportion of household waste can be recycled and converted into biogas energy. This is primarily because the anaerobic digestion treatment is a low-temperature, biological process. It is designed to treat the mixed, residual waste that remains after recyclable materials have already been separately collected. It complements existing recycling schemes and helps to improve the overall recycling rate by recovering materials from waste that might otherwise have been landfilled or incinerated. Dong Energy will finance, build and operate the plant in Northwich (Cheshire, UK), which is scheduled to be operational in 2017. The plant will also require around 24 full-time local employees to operate it (...) The plant will be able to receive unsorted household waste, which will be converted into biogas, recyclable plastics and metals. The biogas is converted to electricity via gas engines. It will have an annual capacity of 120 000 tonnes of waste, which will be supplied by the UK waste management company FCC Environment. The design and planning stages have been completed. **The patented RENescience technology is said to be very efficient at capturing organic materials and can help to increase recycling rates by extracting clean materials such as plastic bottles.** RENescience does not involve waste incineration but uses enzymes, mechanical sorting and anaerobic digestion to produce biogas. In the case of Northwich this gas will be used to generate approximately 6.2 MW of renewable electricity, as well as clean recyclable materials and other products. 1.2 MW of the output will be used on site, and the remainder exported to the grid (...) The RENescience process is undertaken at low temperature and ambient pressure conditions in two fully enclosed vessels, the bioreactors, which are sealed rotating horizontal cylindrical tanks approximately 45 m long and 4.5 m diameter.”

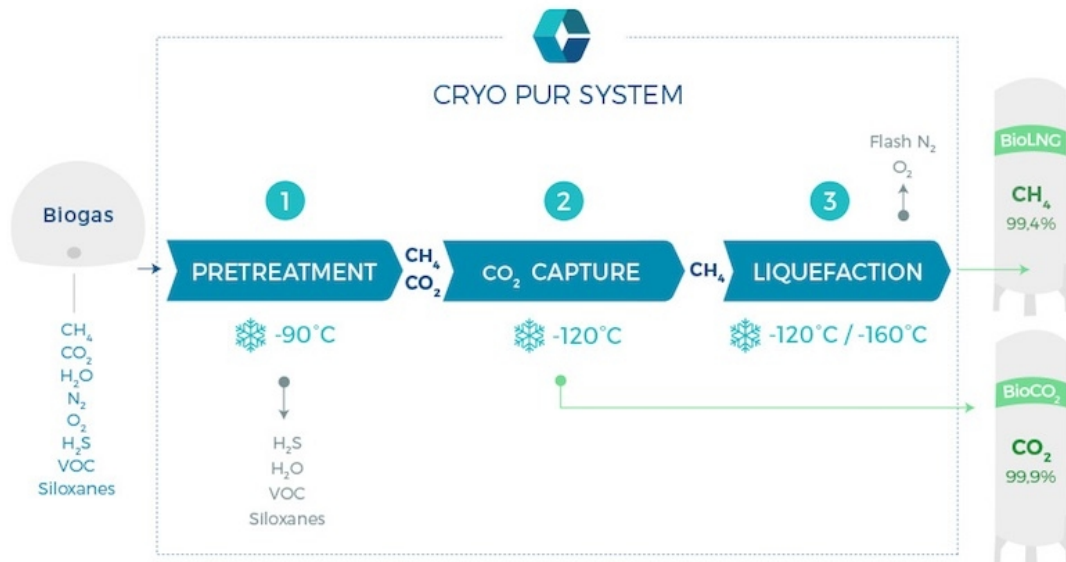


Waste plant concept with [REnescience](#) technology

May 10, 2016. **Food Waste: The Importance Of Keeping It Local** by Paul Killoughery, CIWM Journal Online. “Focusing on AD, we know that London’s capacity is currently at only around the halfway mark and more sites are being built within the boundaries of the M25. It leads us to question why food waste is transported out of London to facilities in the Midlands, for example. The answer is simple. Some regions are over serviced by AD plants in terms of the volume of food waste available in that area. To offset this, they poach business from other areas, thus needlessly increasing the carbon footprint left by transporting the waste. According to recent London Assembly figures, around half of London’s food waste is transported out of the capital for treatment (...) Even when waste is being transported to AD plants – the preferred end site for food waste – the detrimental effect of transporting it hundreds of miles virtually defeats the purpose. The Mayor has implemented strategies addressing change in London and supports the development of the food waste infrastructure, but there is a long way to go. Where Does The Rest Go? To put the issue of food waste transportation in perspective, Recycle for London estimates that the capital produces **890,000 tonnes of consumer waste a year. We know that around 100,000 tonnes are currently processed by London-based AD plants** – so where is the remainder going? Some will be non-segregated and difficult to pin down where it is going and how it is processed, but a great portion of this will be transported out of the capital to plants elsewhere. These figures are shocking and highlight just how much there is still to do in this area. As well as promoting the necessity of segregating food waste and the benefits of AD, we need to draw more attention to the distance food waste is travelling and how to reduce this. One course of action would be to call for stricter guidelines on new AD plant development, based on facilities already available in those areas where planning is applied for. New development should only be permissible in areas where there is sufficient need, meaning a surplus of food waste being produced compared to the capacity of facilities available locally to treat it.”

May 10, 2016. **Avis d’expert : le biogaz, une solution durable pour valoriser les déchets.**

“Produit naturellement depuis des millénaires, le biogaz a longtemps été ignoré comme énergie renouvelable, à tel point que les émissions de biogaz des décharges ont d’abord tout simplement été brûlées en torchère. Aujourd’hui, les projets de valorisation du biogaz se multiplient en Europe et en France. Denis Clodic, membre de l’Académie des technologies, co-lauréat avec le GIEC du prix Nobel de la paix 2007, et fondateur de Cryo Pur en 2015, start-up porteuse d’une technologie de rupture de production de biocarburant à partir de déchets organiques, nous explique les enjeux liés au développement de cette nouvelle source d’énergie.”



Cryo Pur technology valorize biogas with bio-LNG and bioCO₂

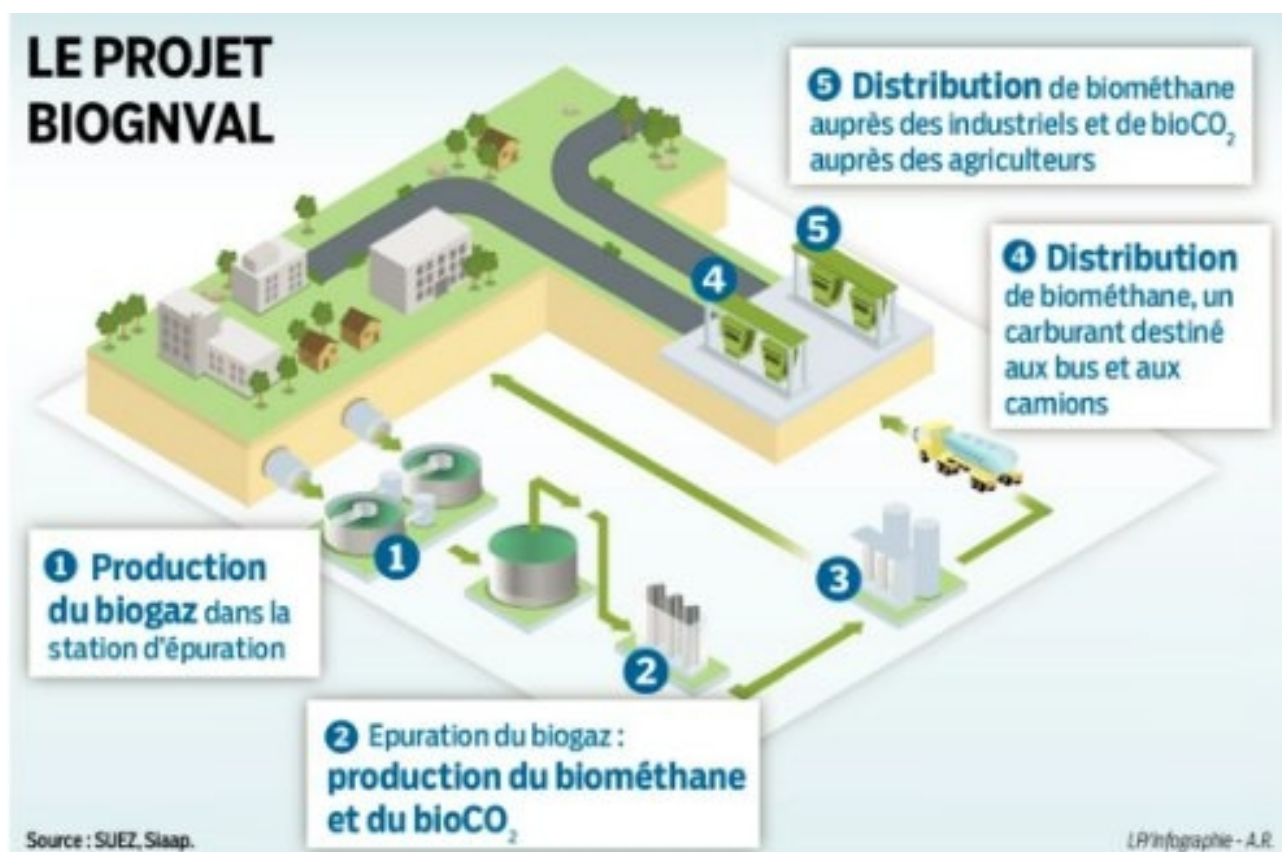
May 9-16, 2016. **Sweden national biogas week.** “Biogas is the cleanest vehicle fuel in the market. National Biogas Week dedicated to the five million Swedish climate heroes that sort household food waste. The environmentally friendly biogas is now taking a big step towards the breakthrough as the smart future fuel for all vehicles. Linköping is the country's largest production site and produce biogas which replaces more than 13 million liters of gasoline and diesel per year (...) **Biogas is crucial for Sweden to be successful into switch to a fossil-fuel independent vehicle fleet in 2030.** But biogas is so much more than the market's cleanest vehicle fuel. All Swedes, those who daily visit the toilet and the more than 5 million Swedes sort their food waste in the form of banana skins and other leftovers, contributes to the local cycle in which a climate-neutral fuel is produced in their own municipality. All these people produce the fuel for vehicle which they can drive their car. But not only that, the nutrients that are not the biogas is returned to our fields in the form of bio-fertilizer and thus closes the cycle (...) **On Swedish roads rolls 50 000 biogas vehicles. Our country is the world leader in the technology to replace petrol and diesel with biogas from waste - every six Swedish bus and every fourth Swedish taxis run on gas. It is a world record.**”



BioGNL produit par BioGNVAL alimentera la station de Rungis

May 9, 2016. **The SIAAP and Suez introduce BioGNVAL, an unprecedented solution to convert wastewater into liquid biofuel.** “Valenton’s plant (Val-de-Marne) is one of the largest water treatments plants in Europe, dealing with the wastewater produced every day by almost 9 million

inhabitants of the Paris region. The **BioGIVAL industrial demonstrator** is the first of its kind in France to reuse the biogas from the treatment of wastewater as liquid biofuel (bioLNG), a renewable energy that is easy to store and transport. **This innovation is made possible by the cryogenic process developed by Cryo Pur** that purifies the biogas by separating its components - methane and CO₂ - to produce biomethane, which is then transformed into liquid biofuel (...) The BioGIVAL project has now demonstrated that we can produce from our wastewater a clean fuel that does not emit any fine particles, make 50% less noise and cuts CO₂ emissions by 90% compared with a diesel engine. The BioGIVAL industrial demonstrator can treat almost 120 Nm³/h of biogas, to produce one tonne/day of bioLNG, or two full tanks for a heavy good vehicle. Tests have shown that the **wastewater produced by 100,000 inhabitants could produce enough bioLNG to fuel 20 buses or 20 trucks**. BioLNG has numerous applications, because the liquefaction process reduces its volume by a factor of 600, making it easy to store and transport (...) The European directive 2009/28/CE set the target of incorporating 10% of renewable energies in the transport sector by 2020. The production and distribution of bioLNG as an alternative to fossil fuels therefore continues the drive to develop renewable energies that is encouraged by French, European and global authorities. The SIAAP (Syndicat Interdépartemental pour l'Assainissement de l'Agglomération Parisienne) is actively encouraging the development of this biofuel. It also offers some major advantages to the regions: it is both **a lever to achieve regional energy independence and a solution to combat climate change**. Belaïde Bedreddine, President of the SIAAP, declared: "In my opinion, this biogas from our wastewater treatment plants represents **a concrete contribution by the regions to the joint effort to the energy transition**. Indeed, this innovative offer is in line with our industrial strategy by a medium and long term. It is a technological solution that can be duplicated with the environmental benefits of an economic fuel, sustainable, easy to store and safe for public health" For SUEZ, this technology of the future strengthens the company's position on the French and the international biogas markets, by enabling it to propose a new form of local and renewable energy to local authorities and industrials. The Group is a pioneer and a leader in the production and recovery of biomethane from wastewater in France and has many references, with almost 170 methanation installations in its water and waste treatment plants all over the world. It aims to increase its production of biogas by between 30% and 50% in the next five years."



May 9, 2016. **A Valenton, les eaux usées deviennent... du biocarburant** by Agnès Vives, Le Parisien. “Et si demain vous preniez un bus qui roule grâce à vos eaux usées ? C’est le défi que lance le Siaap, en partenariat avec le groupe Suez. Le Syndicat intercommunal d’assainissement de l’agglomération parisienne présentait avec ses partenaires à Valenton, sur le site de son usine Seine Amont le prototype BioGNVAL (...) Le bioGNL peut être utilisé pour le transport de personnes (bus) et de marchandises avec des camions disposant d’une autonomie de plus de 700 km. Mais ce biocarburant peut aussi être distribué dans des stations-service de gaz naturel, — comme à Rungis — ou auprès d’industriels (...) « Valenton peut produire 1 t de bioGNL par jour, soit le plein de deux camions et 1,5 t de bioCO2 par jour. **L’objectif, à l’horizon 2023, est de produire du biométhane pour 30 000 bus, sachant que 25 000 bus roulent en France** », indique Pierre Coursan, chef de marché chez Suez. Mais les industriels attendent toujours la réglementation. Les textes prévoient une tarification seulement pour la réinjection de biogaz dans les réseaux.”



May 5, 2016. **Major coalition launched to make economic case for better cities**. The Partnership of over 20 major institutions will support national-level decision making, ensuring that city action is linked to broader economic planning. The New Climate Economy, along with C40 Cities Climate Leadership Group (C40) and the WRI Ross Centre for Sustainable Cities, launched the **Coalition for Urban Transitions**, the first major international initiative to make the economic case for better urban development globally (...) “**Cities are the key to achieving both the Sustainable Development Goals and the national climate commitments of the Paris Agreement**” (...) “Mayors know about the economic and wider benefits of sustainable cities, which is why many are doing everything they can to act on the opportunities from low carbon growth” (...) “However, the scale of the urbanisation challenge is so large that we can’t do it alone. **We need national-level policy makers and economic planning to complement city-level efforts.** That’s where the Coalition for Urban Transitions will play a big role.” Managing urban development better can trigger major dividends. Recent research has found that investing in compact, connected, and efficient cities could substantially reduce greenhouse gas emissions and generate global energy savings with a current value of US\$17 trillion by 2050. “**The scale and pace of the global urban revolution happening now cannot be underestimated and the opportunities – if managed well – could be tremendous.** For instance, just investing in sustainable transport offers not only social and environmental advantages but can also deliver savings of as much as \$300 billion per year,” said Aniruddha Dasgupta, Global Director, WRI Ross Center for Sustainable Cities, the managing partner of the Coalition. “Getting this kind of information – about the clear economic benefits of building better cities – into the hands of decision makers can help set us on a path where each country can start to reap the benefits of an urban dividend.”

May 3, 2016. **Power station using biogas from sewage starts in Tochigi** by Keiko Sugiyama, The Asahi Shimbun. “**One of Japan’s largest power plants using biogas emitted from treating sewage** has started operations here, boasting a power generation capacity of 840 kilowatts. Around 1.7 billion yen (\$16 million) was spent to set up the plant within the compounds of the Kawada

Mizu Saisei Center, a water purification station located in the capital of Tochigi Prefecture in eastern Japan. With eight phosphoric acid fuel cell power generators, the plant can produce a maximum 7.17 million kilowatt-hours a year, enough to power 2,000 regular households (...) The operator of the facility turned to power generation as a way not to waste the biogas. 2016 marks 100 years since the start of the water supply service and 50 years since sewage treatment began in Utsunomiya. The city government wanted the biogas power station--a special project--to kick off in the landmark year. **Using the central government's feed-in tariff program, the operator will be able to sell the generated electricity for 20 years**, creating up to 300 million yen in benefits for the local economy (...) According to the Tochigi prefectural government's urban development section, **digestion gas power generation is currently spreading across Japan**. The latest facility is the sixth one set up in the prefecture. It is also the fourth power plant in Tochigi Prefecture that uses fuel cells, following the three facilities in Kaminokawa, Nikko and Tochigi that began commercial operations between February and April last year. Fuel cells generate electricity through a chemical reaction of hydrogen from digestion gas and oxygen in the air."

May 2, 2016. **An Energy Blockchain for European Prosumers** by Giulio Prisco, Bitcoin Magazine. "A Bitcoin-style virtual currency could save Europe's power grids from reaching breaking point as more and more "prosumers" come on line, the [European Commission's Horizon magazine reports](#). Prosumers – a buzzword in the emerging sharing economy – are consumers who also put energy back into the network. The European Union is aiming for an 80 percent reduction in greenhouse gases by 2050, but European energy distribution networks are organized top-down, for large providers that distribute energy to consumers either directly or through smaller local providers. More and more consumers are becoming prosumers, who produce part or all of their own energies with renewable "green" technologies such as solar energy, and are willing to trade energy with their peers."

RRI: inspiring concepts, findings and practices

May 13, 2016. **Navigating towards shared responsibility in research and innovation** by The Danish Board of Technology. "The [Res-AGorA Project](#) has developed a framework of principles intended to harness the self-governing capacities and capabilities of research and innovation actors within Europe. This orienting framework will help actors to understand their responsibility challenges and to design, negotiated and implement their own context specific understanding of responsibility in research and innovation."

May 12, 2016. **To confront 21st century challenges, science must rethink its reward system** by Frank Miedema, The Guardian. "One of [Science in Transition](#)'s founders describes how his experience as a young HIV/AIDS researcher convinced him that **science needs to change**."

May 10, 2016. **Spinning off under RRI Principles: Applied Nanoparticles case**. "APPLIED NANOPARTICLES S.L. (AppNPs) is a spin-off of the Catalan Institute of Nanoscience and Nanotechnology (ICN2), the University Autònoma of Barcelona (UAB) and the Institut Català de Recerca i Estudis Avançats (ICREA). Among its co-founders are scientists from these institutions, and experts on Responsible Research and Innovation (RRI), e-communication and business development and technology transfer. AppNPs has the office address in Barcelona. The main current objective of AppNPs is the commercial exploitation of the patent application "biogas production" (BioGAS+), in the U.S. and Europe, consisting on the use of iron oxide nanoparticles as additives to optimise the production of biogas by feeding with essential iron the involved bacterial consortia responsible for that. AppNPs also develops projects on the production,

characterisation and commercialization of model nanoparticles, as well as consulting work related to other possible industrial uses of inorganic nanoparticles. AppNPs business is based on the principles of Responsible Innovation, focusing on the process design of nanoparticles, low energy consumption, low toxicity, waste minimization and reduction of emissions.”

<http://www.appliednanoparticles.eu/>

<https://twitter.com/biogasplu>

May 9, 2016. **RRI: beyond the 6 key issues by HEIRRI.** “The European Commission defined six thematic elements of Responsible Research and Innovation (RRI): **public engagement, science ethics, science education, gender equality, open access and governance.** However, from its very beginnings, the HEIRRI project has emphasized that the concept of RRI is way more than these arbitrarily assigned issues. **RRI is a critical and transformative concept of the science-society relationship, emerged from scholarly research.** Its content is not fixed, and its radical approach encourages reflection and a new way of doing research, that is anticipatory, inclusive, reflexive and responsive. ”



May 4, 2016. **II Jornadas RRI Tools Barcelona ¿Cómo implementar la Investigación e Innovación Responsables?** “La Investigación e Innovación Responsables (RRI, de sus siglas en inglés) es una cuestión emergente, impulsada por la Comisión Europea, que replantea el rol de la ciencia y la innovación en la sociedad y que se está incorporando de manera transversal desde varios programas como el programa marco Horizonte 2020. Pero, ¿a qué nos referimos exactamente con el término RRI? ¿Qué rol podemos tener los diversos actores del sistema de ciencia e innovación? ¿Cómo podemos pasar a la práctica?”

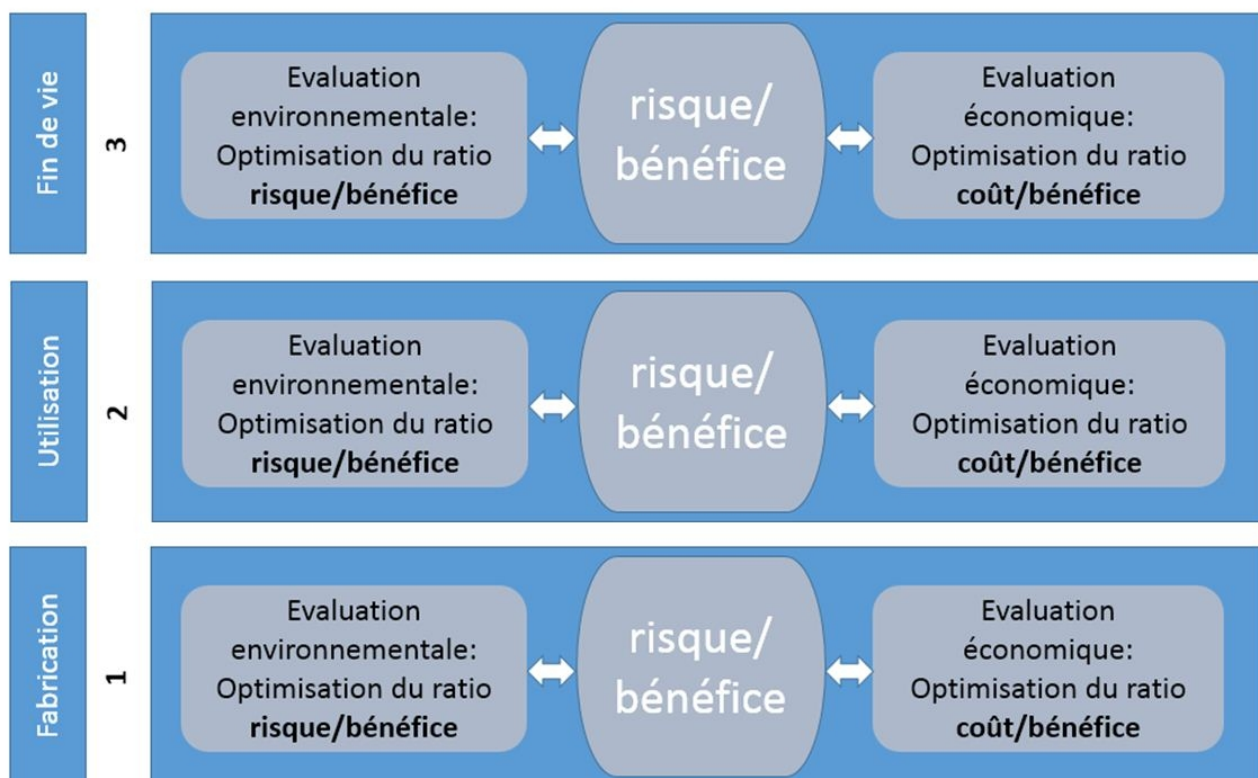
May 4, 2016. **Inspiring findings to expand the RRI scene.** “After more than three years of work, the first EU-funded projects with explicit objectives to address the emerging concept of responsible research and innovation (RRI) are ready to present their findings. These will be discussed at a dedicated ESOF2016 session, entitled [Responsible research and innovation in action: policy and practice in Europe](#), in July in Manchester, UK. In this article, we present the outcome of four projects bundled as the Go4 projects including [GREAT](#), [Progress](#), [Res-AGorA](#) and [Responsibility](#). These show a concern to contribute to a more contextualised understanding of the concept of RRI. We also refer to approaches, tools and mechanisms that have been developed to facilitate the up-take of RRI within science and innovation. The quest for RRI has made remarkable progress over the last few years. It started back in 2003 from a rather confined academic debate until it became firmly established in the EU’s research and innovation policy as a cross-cutting theme in the current framework programme Horizon 2020. Furthermore, the [Rome Declaration on](#)

[Responsible Research and Innovation in Europe](#) received high-level endorsement from the European Council in 2014. While the discourse on RRI is far from being settled, an impressive number of RRI activities have unfolded over the past few years. ”

May 3, 2016. **What will be the future of Responsible Research and Innovation?** Philippe Galiay, Hilary Sutcliffe and Arie Rip, experts in the field of Responsible Research and Innovation share their views.

April 29, 2016. **Investigación e Innovación Responsables y ciencia abierta** por Ignasi López Verdeguer y Guillermo Santamaría, Heraldo. “Ciencia ciudadana, ciencia abierta, acceso abierto, investigación participativa..., términos que hasta no hace mucho eran exóticos o ajenos al mundo de la ciencia, comienzan a ser cada día más corrientes. Sin duda, algo ocurre en cómo se produce la ciencia para que las grandes organizaciones internacionales (OCDE, CE, Unesco) se hagan eco e impulsen una transformación hacia una investigación e innovación más abiertas, colaborativas y participativas. Nos estamos acostumbrando a ver cómo grupos de ciudadanos monitorizan asuntos importantes de salud pública (como la presencia de vectores de enfermedades, como el mosquito tigre, a través de sus teléfonos) o impulsan acciones de micromecenazgo para investigar enfermedades raras. En algunos países existen procesos de participación para definir las políticas públicas de investigación y cada vez hay más universidades que cuentan con oficinas ciudadanas ('science shops') para canalizar las cuestiones que más preocupan a la ciudadanía y convertirlas en temas de investigación. Pero **¿estamos preparados como sociedad para asumir esa responsabilidad en la producción y aplicación de conocimiento?** Según un 55% de Europeos sí: la ciudadanía debería participar más activamente de las decisiones de la ciencia. Y la Comisión Europea ha decidido facilitarlo a través de su programa de I+D+i, Horizonte 2020. Para ello impulsa el concepto de Investigación e Innovación Responsables (RRI). Los cambios que promueve la RRI son de calado...”

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Source: [Auplat et al. 2015](#), SNO