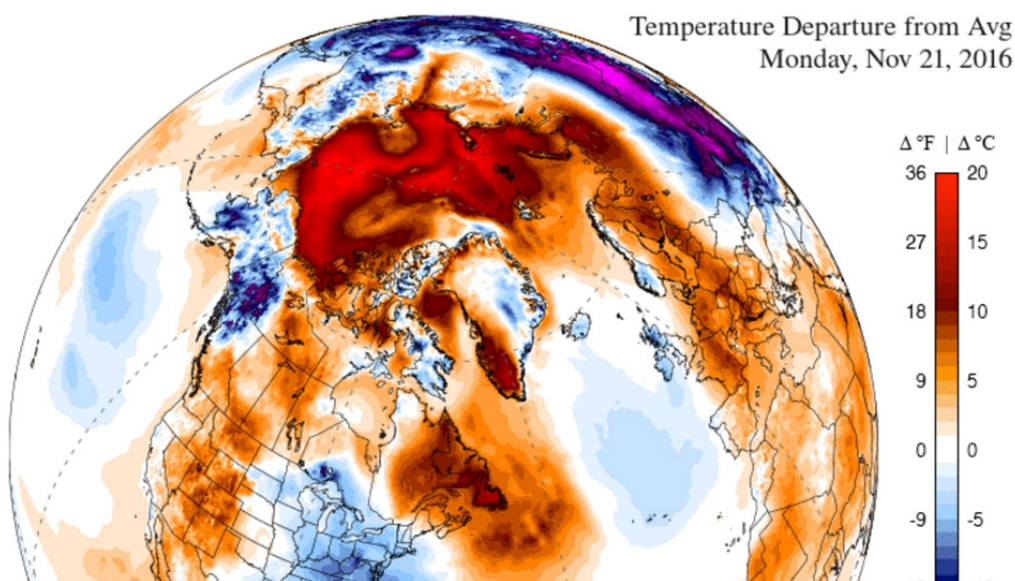




## Global Energy Transition: Paris Agreement entered into force

November 21, 2016. **Global Warming in the Arctic: A Sensitive Climate Gone Off the Rails** by Erika Spanger-Siegfried, Union of Concerned Scientists. “It is polar night in the Arctic—a darkness that lasts from early October to early March. Temperatures rarely escape freezing in that darkness, averaging -30° F until the light begins to return in spring. Right now, however, **temperatures across much of the Arctic are 36 degrees F [20 degrees Celsius] above normal**. Large areas are well above freezing. And instead of rapidly expanding, sea ice extent is in decline. Taken together, **this is not unusual. It’s unheard of** (...) The Arctic plays an important role in moderating global climate. When heat from the tropics is delivered north to the Arctic by winds and ocean currents, the region exerts a cooling effect on both. Without this distribution of energy, the lower latitudes would overheat (...) the Arctic, like the rest of the planet, is warming, and **unlike the rest of the planet, warming in the Arctic can feed rapidly on itself** (...) “A small temperature increase at the poles leads to still greater warming over time, making the poles the most sensitive regions to climate change on Earth. According to scientific measurements, both the thickness and extent of summer sea ice in the Arctic have shown a dramatic decline over the past thirty years (...) **The loss of sea ice also has the potential to accelerate global warming trends and to change climate patterns.**”



context:

November 23, 2016. **Climate change happening 'too fast' for plant and animal species to adapt** by Charlotte England, Independent. “Analysis of 266 insects, amphibians, birds, mammals, and reptiles, suggests many face extinction. **Most plants and animals cannot adapt at the rate the climate is changing**, scientists have said. A study of more than 250 species found their ability to change their “climatic niche”, the conditions under which they can survive, will be vastly outpaced by future changes in rainfall and temperature. Although some animals might be able to move to cope with rising temperatures, others live in isolated areas which they cannot leave. Amphibians, reptiles and plants are particularly vulnerable, according to US researchers and tropical species are at higher risk than those which live in temperate zones.”

November 3, 2016. **“Unstoppable” Destabilization of West Antarctic Ice Sheet: Threshold May Have Been Crossed** by Brenda Ekwurzel, Union of Concerned Scientists. “The most sophisticated ice sheet models to date suggest that once the West Antarctic Ice Shelf destabilization begins, the initial contributions to global sea levels are at rates we can likely adapt to, followed by a jump to major rates of sea level rise.”

October 27, 2016. **Sixth Wildlife Mass Extinction May Happen in 2020, Experts Say.** “After the five previous mass extinctions faced by planet earth, the sixth may happen by 2020 according to the projections made by WWF and the Zoological Society of London. Given the current rate of biodiversity loss, including climate change, what we are facing is a problematic future with no assurance of our system's stability which is one of the milestones caused by this era on man: the Anthropocene. **“For the first time since the demise of the dinosaurs 65 million years ago, we face a global mass extinction of wildlife.** We ignore the decline of other species at our peril -- for they are the barometer that reveals our impact on the world that sustains us. Humanity’s misuse of natural resources is threatening habitats, pushing irreplaceable species to the brink and threatening the stability of our climate,” said WWF Science and Policy director Dr. Mike Barrett (...) Based on their findings of the analysis of 3,706 species, which is noted as the most comprehensive work yet, **we have already lost 58 percent of animal population from 1970 to 2012. Using the same rate, it could be foreseen that 2020 will leave a mark of wiping out two-thirds of the faunal species in the planet.”**

October 25, 2016. **Appeals Court: Animals Can Be Listed as Threatened Based on Climate Change Risk.** “A U.S. appeals court ruled that federal agencies can list species as threatened based on projections of how climate change will impact their habitats.”



November 10, 2016. **Landmark U.S. Federal Climate Lawsuit.** “Exercising my ‘reasoned judgment,’ I have no doubt that the right to a climate system capable of sustaining human life is fundamental to a free and ordered society.” –U.S. District Judge Ann Aiken. On November 10, 2016 Judge Ann Aiken issued an opinion and order denying the U.S. government and fossil fuel industry’s motions to dismiss a constitutional climate change lawsuit filed by 21 youth. The decision means that the youth, age 9 to 20 and from all over the U.S., now have standing because their rights are at stake, and now their case is headed to trial. The youth had filed their constitutional climate lawsuit against the federal government in the U.S. District Court for the District of Oregon in 2015. Also acting as a plaintiff is world-renowned climate scientist Dr. James E. Hansen, serving as guardian for future generations and his granddaughter. Their complaint asserts that, through **the governments affirmative actions in causing climate change, it has violated the youngest generation’s constitutional rights to life, liberty, property, as well as failed to protect essential public trust resources.** On April 8, 2016, U.S. Magistrate Judge Thomas Coffin first denied the government and fossil fuel industry's motions to dismiss. While reviewing his decision, Judge Aiken heard oral arguments on September 13, 2016, and issued her historic ruling on November 10, 2016.”

context:

November 2, 2016. **High court rules UK government plans to tackle air pollution are illegal** by Damian carrington, The Guardian. “The government’s plan for tackling the UK’s air pollution crisis has been judged illegally poor at the high court, **marking the second time in 18 months that ministers have lost in court on the issue.** The defeat is a humiliation for ministers who by law must cut the illegal levels of nitrogen dioxide suffered by dozens of towns and cities in the “shortest possible time”. Legal NGO [ClientEarth](#), which brought the case, argued that current plans ignore many measures that could help achieve this, placing too much weight on costs.”

April 14, 2015. **In Landmark Case, Dutch Citizens Sue Their Government Over Failure To Act On Climate Change** by Natasha Geiling, Climate Progress. “**For the first time ever, climate change is being taken to court over human rights.** Public arguments are scheduled to begin today in the Netherlands, where nearly 900 Dutch citizens have filed a lawsuit against their government for failing to effectively cut greenhouse gas emissions and curb climate change.

Hailed by Dutch press as a “landmark legal case,” it’s the first European example of a group of citizens attempting to hold a government responsible for inefficient climate policies, and the first time that existing human rights laws have been the basis of a case (...) The plaintiffs will ask the court to force the Dutch government to reduce its greenhouse gas emissions by between 25 and 40 percent relative to their 1990 levels by 2020 — reductions that the IPCC has said developed nations must make if the world wants a 50 percent chance of avoiding a 2 degree Celsius increase in global temperature (...) The sustainability-focused Urgenda Foundation hopes that **this lawsuit will inspire others to use courts to hold countries accountable for failing to act on climate change.**”



*[Politicians Discussing Global Warming](#) by street artist Isaac Cordal, Berlin 2011*

November , 2016. **The burning question: Climate change in the era of Trump**, The Economist. **“With or without America, self-interest will sustain the fight against global warming.** “In 2009 Donald Trump signed a public letter calling for cuts to America’s greenhouse-gas emissions. In 2012 he dismissed climate change as a hoax cooked up by the Chinese. On the campaign trail he promised to withdraw from an international accord, struck last year in Paris, to fight global warming. This week, as president-elect, Mr Trump said he has an “open mind” on the Paris deal and that there is “some connectivity” between human activity and climate change. Such fickleness gives succour to pessimists and optimists alike. Those who are gloomy about the climate still expect America to ignore or withdraw from the Paris agreement, or to abandon the 1992 UN framework that underpins it. Sunnier folk hope that Mr Trump will govern differently from how he campaigned, enabling the fight against climate change to continue unabated. The reality is more complex. Mr Trump’s brand of “America First” populism will do nothing to help the planet, but neither need it be the catastrophe many fear (...) To be clear, there is much to regret in the prospect of America relinquishing its leadership on fighting climate change. The idea of the world’s second-biggest polluter free-riding on the efforts of others has some countries mulling counter-attacks—one proposal, a carbon tariff on American exports, could lead to a damaging trade war. The Paris agreement was always likely to fall far short of its goal of limiting global warming to within 2°C of pre-industrial temperatures. A more recalcitrant America puts the prospect of deep decarbonisation even further off. **And evidence that Mr Trump’s America is withdrawing from its global role is worrying. Yet with climate change, as with other areas that have come to depend on American leadership, the rest of the world can make the best of a bad situation by staying the course.** China’s carbon emissions may already have peaked. Improvements in cars’ fuel efficiency cut oil consumption by 2.3m barrels a day in 2015, even when petrol was cheap. China, India, the European Union, Canada and others have strong incentives to embrace cleaner technologies. If they work together they can make a difference—with or without the United States.”



context:

November 22, 2016. **Open Letter to President-elect Donald Trump on Climate Action by Climate Mayors**. “The effects of climate change—extreme storms, wildfires and drought; sea level rise and storm surge; choking air pollution in cities; disruption of agricultural supply chains and jobs in rural heartlands; and coastal erosion, to name a few—are a clear and present danger to American interests at home and abroad. This is why the U.S. Department of Defense stated in 2015 “that **climate change is an urgent and growing threat to our national security**”. Furthermore, estimates have shown these impacts from climate change could cost the American economy \$500 billion annually by 2050, and that figure will only rise unless we work together to stem, and ultimately reverse, the amount of greenhouse gases entering our atmosphere. **The cost of prevention pales in comparison to cost of inaction, in terms of dollars, property and human life**. As our incoming President, as a businessman, and as a parent, we believe we can find common ground when it comes to addressing an issue not rooted in politics or philosophy, but in science and hard economic data. Simply put, we can all agree that fires, flooding and financial losses are bad for our country, that we need to protect our communities’ most vulnerable residents who suffer the most from the impacts of climate change, and that we all need healthier air to breathe and a stronger economy—rural and urban, Republican and Democrat—and in terms of our domestic quality of life and our standing abroad. On November 8, American voters approved more than \$200 billion in local measures, funded by their own local tax dollars, to improve quality of life and reduce carbon pollution (...) As President, you will have the power to expand and accelerate these local initiatives which the people resoundingly supported. We call upon you and the federal government you will lead to help cities leverage funds for the hundreds of billions of dollars in transit, energy, infrastructure and real estate development necessary to upgrade our infrastructure for the 21st century. We ask that you lead us in expanding the renewable energy sources we need to achieve energy security, address climate change and spark a new manufacturing, energy and construction boom in America. We ask that you help provide American businesses the certainty to invest through continued tax credits for electric vehicles, solar power, renewables and other clean technologies. And we ask that you shift to embrace the Paris Climate Agreement and make U.S. cities your partner in doing so. **While we are prepared to forge ahead even in the absence of federal support, we know that if we stand united on this issue, we can make change that will resonate for generations**. We have no choice and no room to doubt our resolve. The time for bold leadership and action is now.”

November 22, 2016. **Washington Won't Have Last Word on Climate Change** by Michael R. Bloomberg, Bloomberg News [Former mayor of New York City, is the founder and majority owner of Bloomberg LP, the parent company of Bloomberg News. He is the UN secretary-general’s special envoy for cities and climate change]. “No matter what happens in Washington, no matter what regulations the next administration adopts or rescinds, no matter what laws the next Congress may pass, we will meet the pledges that the U.S. made in Paris. The reason is simple: **Cities, businesses and citizens will continue reducing emissions, because they have concluded -- just as China has -- that doing so is in their own self-interest (...)** Last June in Beijing, during the U.S.-China Cities Summit on Climate Change, we announced a partnership between the Compact of Mayors and China’s Alliance of Peaking Pioneer Cities. Since then, the Compact of Mayors has joined forces with the European Union’s Covenant of Mayors, making the new Global Covenant of Mayors the single largest and most ambitious coalition of mayors on climate change. In fact, **if the Trump administration does withdraw from the Paris accord, I will recommend that the 128 U.S. mayors who are part of the Global Covenant of Mayors seek to join in its place**. Washington will not have the last word on the fate of the Paris agreement in the U.S. -- mayors will, together with business leaders and citizens.”

November 14, 2016. **California governor pledges US climate change leadership** by Ed King, ClimateHome. “Sunshine state has target of 40% carbon cuts on 1990 levels by 2030 and Donald Trump win will not change that, says governor. **The next US government may decide to pull out of the UN’s flagship climate change deal, but the state of California is not playing ball**. Last week Governor Jerry Brown called climate change an “existential threat” and said the state would “continue to confront it.”

November 9, 2016. **Trump Wins: Welcome to the new world** by Anmol Saxena, The BRICS Post. “Modern history will record November 8, 2016 as **the day when the United States of America officially decided to vote for a global retreat** – from the heady rhetoric of ‘Let’s make the world a better place’ to “Let’s make America great again”. Americans have voted for building a wall to protect what they have, against the dream of global dominance. **This surely marks the end of the uni-polar world as we know it.**”

November 4, 2016. **Celebrate the Entry into Force of the Paris Agreement With Us!** by the United Nations Framework Convention on Climate Change (UNFCCC). “The speed with which the agreement has entered into force underlines just how much support climate action now has across the globe. The Paris Agreement is also an integral part of the Sustainable Development Goals (SDGs), also agreed in 2015. What started as two agendas have merged into one bold vision of a better world for every man, woman and child. **Under the Paris Agreement, all nations have agreed to combat climate change and to unleash actions and investment towards a low carbon, resilient and sustainable future that will keep a global average temperature rise well**

**below 2 degrees Celsius with the accepted international aim of working to limit it to 1.5 degrees Celsius.** The Paris Agreement and the SDGs will be successful only if everyone fully supports them and helps bring their ambitious goals to life with real action – from national, regional and local leaders; from investors and businesses to citizens who desire to live in a safe and prosperous world, and who want to actively shape that world (...) **On 4 November, it's "All systems go!" for the Paris Agreement."**

context:

November 28, 2016. **Marrakech y la posverdad del cambio climático** por Javier García Brea. “La presencia de España en la Cumbre de Marrakech ha sido extemporánea. Aún no ha ratificado el Acuerdo de París y con crecimiento económico sigue incrementando sus emisiones. El Gobierno ha aprovechado la cumbre para anunciar una Ley de Cambio Climático sin presentar un borrador, ha declarado que no cerrará ninguna central de carbón y que no va a estudiar una hoja de ruta a 2030 y 2050 para cumplir los compromisos climáticos y mantiene la moratoria para nuevas instalaciones renovables. La evidencia de los datos de Eurostat no refrendan esta política negacionista en la práctica. España es el 4º país europeo con la energía eléctrica más cara, el 3º con el precio del gas más caro y el tercer país que más ha incrementado sus emisiones, solo por detrás de Malta y Chipre. **El liderazgo mundial en renovables ha sido sustituido por el liderazgo en importaciones de gas y petróleo (...)** España tiene un grave problema de falta de gobernanza del cambio climático. El nuevo Gobierno ha mantenido el medio ambiente como una cuestión residual, incluido en el Ministerio de Agricultura que carece de competencias en energía y en los sectores más contaminantes como la industria, la edificación o el transporte, repartidos en ministerios distintos. No se atisba ninguna reforma que aumente la credibilidad en la lucha contra el cambio climático.”

November 24, 2016. **Germany's Energy Fix for France** by J. Flauger, F. Hubik and T. Hanke, Handelsblatt global. **“France is at risk of blackouts this winter because a dozen nuclear reactors are off the grid. It's going to need imports from countries including Germany, which has abundant supplies thanks to its heavy investment in green energy.”**

November 16, 2016. **World Energy Outlook 2016** by International Energy Agency. **“The Paris Agreement on climate change is at its heart an agreement about energy.** Transformative change in the energy sector, the source of at least two-thirds of greenhouse-gas emissions, is essential to reach the objectives of the Agreement. The changes already underway in the energy sector, demonstrating the promise and potential of low-carbon energy, in turn lend credibility to meaningful action on climate change. **Growth in energy-related CO2 emissions stalled completely in 2015.** This was mainly due to a 1.8% improvement in the energy intensity of the global economy, **a trend bolstered by gains in energy efficiency, as well as the expanded use of cleaner energy sources worldwide, mostly renewables.** An increasing slice of the roughly \$1.8 trillion of investment each year in the energy sector has been attracted to clean energy, at a time when investment in upstream oil and gas has fallen sharply. The value of fossil-fuel consumption subsidies dropped in 2015 to \$325 billion, from almost \$500 billion the previous year, reflecting lower fossil-fuel prices but also a subsidy reform process that has gathered momentum in several countries (...) World Energy Outlook 2016 sees **broad transformations in the global energy landscape.** As a result of major transformations in the global energy system that take place over the next decades, renewables and natural gas are the big winners in the race to meet energy demand growth until 2040.”

November 16, 2016. **UN Report: 1.5 Degree Limit to Improve Growth, Jobs and Safety** by Climate Vulnerable Forum, United Nations Development Programme. “The **Low Carbon Monitor report** key findings include the fact that economic growth as measured by GDP would be 10% , or USD12 trillion higher, if the 1.5 °C threshold is held, compared to current policies which would see temperature rise to 3°C or more. The report shows that 1.5°C is feasible, requiring global zero CO2 emissions at mid-century and the investment share of renewable power reaching close to 100% of the energy mix.”

November 14, 2016. **Launch of World Biogas Association.** “The **World Biogas Association (WBA)** has been launched **at the United Nations Convention on Climate Change (UNFCCC) COP 22** at Marrakesh, Morocco. Following the adoption by the United Nations of a shared vision for transforming lives by 2030 through the Sustainable Development Goals and the first-ever universal, legally binding global climate agreement between the 195 national governments at the UNFCCC COP21 at Paris in December 2015, the founders have established the World Biogas Association to demonstrate the huge contribution the biogas and anaerobic digestion (AD) industries make to these goals and targets, and to facilitate the adoption of these technologies globally. **The World Biogas Association is dedicated to supporting the growth of biogas and anaerobic digestion technologies to maximise their contribution to the UNFCCC Commitments and the UN's Sustainable Development Goals.”**

November 14, 2016. **Climate Action Plan 2050: Milestone on the way to modernising Germany.** “The German government has adopted a national Climate Action Plan. By 2050 practically no more coal is to be used to generate power. New buildings are no longer to depend on fossil fuels for heating and hot water. The transport sector is to shift to the use of alternative fuels. The Climate Action Plan 2050 offers essential guidance for all actors in the private sector,

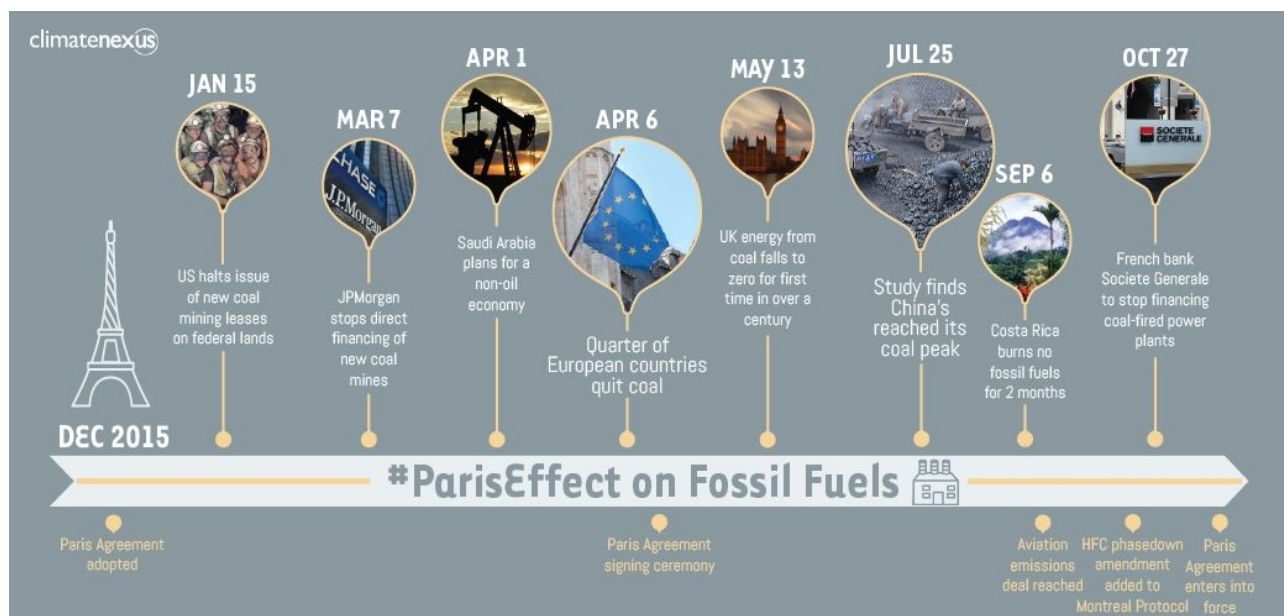
the science and research community, and civil society. By 2030, Germany is to reduce its emissions of greenhouse gases by at least 55 per cent as compared to the 1990 level. By 2040 a reduction of at least 70 per cent is to be achieved.

**Germany thus remains a trailblazer in terms of translating into practice the commitments entered into in the Paris Agreement (...)** The scene must be set today for a greenhouse gas neutral future. A preventive strategy like this makes more sense than facing the costs of having to respond to climate change.”

November 14, 2016. **Grâce à la Chine, les émissions de CO2 restent stables** par AFP agence. “**Pour la troisième année consécutive, les émissions de gaz à effet de serre issues des énergies fossiles ont été stables**, indique une étude du Global Carbon Project. C'est «sans précédent en période de forte croissance économique», indique l'auteure principale, mais encore insuffisant pour limiter la hausse des températures (...) **Cette «rupture claire» par rapport à la poussée des émissions constatée la décennie précédente, a été permise par la Chine**, premier émetteur mondial, qui a réduit son recours au charbon, souligne le Global Carbon Project dans son 11e bilan annuel réalisé par des scientifiques du monde entier.”

November 3, 2016. **Only three years to save 1.5C climate target, says UNEP** by Simon Evans, CarbonBrief. “The door will close on the 1.5C warming limit unless countries raise their ambition before 2020, says the UN Environment Program (UNEP). Greater pre-2020 action is the “last chance” for 1.5C, says the latest annual UNEP Emissions Gap report. It is published one day before the Paris Agreement on climate change enters into force. The deal pledges to keep warming “well below” 2C and to make efforts to keep it below 1.5C.”

November 2, 2016. **Saudi Arabia wants to become global renewable energy powerhouse.** “Despite being the world's second biggest producer of oil, the burning of which is one of the top drivers of greenhouse gas-fuelled climate change, the kingdom of Saudi Arabia wants to turn into a major player in clean, renewable energy generation. **Oil, a fossil energy source that is non-renewable, is quickly turning into a liability, a curse rather than a blessing, for top producers.** Apart from being a relatively dirty energy source, it is currently in oversupply due to the shale oil energy, but also dwindling demand on account of both global economic slowdown and the growth of renewables led by solar and wind energy. It is not surprise then that top producers of oil are scrambling to adapt to remain in business, as their core asset is at risk of becoming obsolete in the coming decades (...) **If climate change targets are to be met, much of its oil reserves could end up being left in the ground, rather than extracted, sold and burned.**”



## Biomethane: the lowest-carbon fuel available

November 30, 2016. **Cheers to that! Confiscated alcohol fuels public transport.** Smugglers trying to sneak alcohol into Sweden are unwittingly helping fuel the country's public transport system – and reduce greenhouse emissions. In 2006, almost 700,000 litres of beer, wine and spirits were seized by Sweden's national customs service. But rather than pour the alcohol down the drain, **the illegal booze was converted into biogas to power some of the country's public transport**

**system, including buses, trucks and a biogas train.** Svensk Biogas AB, who converts most of the liquor, says one litre of pure alcohol is enough to make about half a litre of biogas.

November 29, 2016. **Sustainable Green Gas to grow under the Government's proposed amendments.** "Department for Transport releases consultation on the UK's Renewable Transport Fuels Obligation. **Use of green gas set to increase as "biomethane," a renewable gas derived from food and other organic wastes, is to be used as a transport fuel.** Biomethane included in sub-target for as an advanced, waste-derived renewable fuel. **Biomethane is an powerful and sustainable means of decarbonising heavy goods vehicles.** The Green Gas Certification Scheme has today welcomed the Department of Transport's proposal to incentivise 'development' transport fuels through the Renewable Transport Fuel Obligation. One of these fuels is biomethane, a renewable green gas produced from biomass and wastes which can either be injected to the gas grid or shipped to the point of use. Virginia Graham, Chief Executive of the Green Gas Certification Scheme, commented "Currently most biomethane is injected into the gas distribution network. It can then be taken out, where needed, and used for various purposes, including **for transport. It makes an excellent, clean vehicle fuel, bringing benefits in terms of decarbonisation, reduced particulate emissions and lower noise levels (...)** John Baldwin, Chair of the Renewable Energy Association's Biogas Group said: "**The UK has a tremendous asset in its gas network, and it can be progressively decarbonised through measures such as steadily increasing the share of renewable gas.** While the proposed changes are a positive step we would like to see more ambition. There is an urgent need decarbonise our heavy trucks fleet and the use of biomethane and Bio-SNG delivered via the gas grid are viable ways to do so."

November 25, 2016. **La plus grosse station de gaz carburant en France: [La première station GNV publique d'Ile-de-France inaugurée au port de Bonneuil-sur-Marne](#)** par F. Depaola, 94.citoyens. "C'est la première d'un réseau d'une dizaine dans la région Ile-de-France. Ce jeudi 24 novembre, c'est en grande pompe, sans mauvais jeu de mot, qu'était inaugurée la station publique d'approvisionnement en gaz naturel de ville (GNV) et BioGNV du port de Bonneuil-sur-Marne, porté par le Syndicat intercommunal pour le gaz et l'électricité en Île-de-France (Sigeif). Sur le bord de la route du Fief Cordelier, à quelques dizaines de mètres de la Marne, la nouvelle station de ravitaillement ressemble a toutes les autres stations essence du département. Mais ici, point de diesel ou de sans-plomb. **On trouve seulement seulement du GNV, du bioGNV et un mélange des deux carburants**, fabriqués notamment à partir des déchets récoltés alentours, qui sont ensuite biométhanisés. « **Nous sommes en train de vivre les prémices de la transition énergétique** », se réjouit Jean-Jacques Guillet, le président du Sigeif, qui compte bien accélérer."

November 10, 2016. **Potenziale Italia di 8,5 mld metri cubi di biometano al 2030. Industria, utilities, agricoltura firmano piano programmatico.** "L'Italia, con un adeguato sistema legislativo, sarebbe nelle condizioni di raggiungere una produzione di 8,5 miliardi di metri cubi di biometano al 2030 accrescendo competitività e sostenibilità delle aziende agricole". Questo il pensiero dei firmatari della '**piattaforma tecnologica nazionale sul (bio)metano**' - espresso in occasione della sigla del documento programmatico, ad Ecomondo a Rimini Fiera - che unisce industria, trasporti, settore agricolo, utilities ed associazioni ambientaliste (tra cui il coordinamento del Consorzio italiano compostatori e del Consorzio italiano biogas e la partecipazione di Anigas, Assogasmetano, Confagricoltura, Fise-Assoambiente, Legambiente, Ngv Italy, Utilitalia) "**per far sì che l'Italia diventi produttore di uno dei biocarburanti avanzati più promettenti**". La piattaforma - viene spiegato - "intende valorizzare le soluzioni tecnologiche innovative per far sì **che l'Italia diventi uno dei principali produttori di biometano** ed esprima tutto il potenziale futuro delle attività produttive, della rete gas e della mobilità". Guardando infatti alle potenzialità italiane "l'Italia è il secondo produttore di biogas europeo, dopo la Germania. A fine 2015 risultano operativi nel Paese circa 1.555 impianti di biogas, il 77% dei quali alimentato da matrici agricole". Il biometano può esser ricavato sia dai sottoprodotti di origine agricola sia dalla frazione organica



dei rifiuti urbani derivante dalla raccolta differenziata. Si tratta, concludono i firmatari, di "una risorsa strategica per la quale tuttavia nella normativa nazionale mancano ancora alcuni punti regolamentari; cosa che impedisce l'operatività del settore."

November 4, 2016. **Why Corporate Fleet Owners Should Test Drive Renewable Natural Gas** by Jessica Lyons Hardcastle, Environmental leader. **"Renewable natural gas has the potential to reduce the US heavy transport sector's reliance on diesel and gasoline. And it's compatible with engines that run on natural gas (...)** According to the California Air Resources Board, it is **the lowest-carbon fuel available**. Corporate fleets and government officials are starting to take note (...) A new bipartisan bill in Congress would cut federal excise taxes on trucks that run on compressed natural gas (CNG), liquefied natural gas (LNG) or renewable natural gas (RNG) ... Additionally, the EPA included RNG in its Renewable Fuel Standard volume requirements, boosting RNG as a transportation fuel. And Vancouver BC recently announced it would phase out non-renewable natural gas by 2050 and is working to use more RNG in its trucks. "When you convert a truck from diesel to CNG, which is a fossil fuel, you may get a 40-to-60 percent greenhouse gas emissions reduction," said Joanna D. Underwood, founder and chair of Energy Vision, a nonprofit that promotes low-carbon energy and transportation fuels. By comparison, RNG, Underwood said in an interview, **when made from food waste processed in anaerobic digesters and used as vehicle fuel, can be net carbon-negative over its lifecycle (...)** Underwood recently co-authored an op-ed in The New York Times that argued New York City municipal fleets should stop buying diesels and start buying RNG trucks to help meet the city's ambitious climate goals. Several California cities and counties including Sacramento, South San Francisco, Orange County, Long Beach, Culver City and Santa Monica are already using or have committed to using RNG from local waste sources to power garbage trucks, transit buses and other municipal vehicles, the op-ed says. While the power and torque that heavy-duty vehicles require is often beyond what electric motors and batteries can deliver, **RNG has the energy density and the production potential to decarbonize heavy transport."**



November 4, 2016. **Avec le projet Liger, unique en Europe, la Bretagne mise sur les énergies renouvelables**. "Petite ville discrète du Morbihan, Locminé a choisi de sortir de l'ombre en s'offrant **un centre d'énergies renouvelables unique en Europe: Liger, le pôle aux six énergies vertes**, que François Hollande a inauguré à l'occasion de l'entrée en vigueur de l'accord de Paris sur le climat (...) Alors que le changement climatique s'accélère, les 15.000 habitants du territoire de Locminé sont passés à l'action en valorisant les ressources naturelles locales. Locminé devrait ainsi compenser les 18.000 tonnes de dioxyde de carbone qu'elle émet chaque année. Aux prémices du projet, se souvient Grégoire Super, maire de Locminé et président de Liger, nous avons été pris pour des fous. **Qui aurait pu imaginer, il y a dix ans, que notre commune serait dans peu de temps autonome en énergie, en utilisant les déchets que nous produisons pour nous chauffer, nous éclairer, alimenter nos véhicules ? (...)** Concrètement, Liger est le premier site en France à coupler



chaudière bois et unité de méthanisation, le tout pour produire à lui seul six types d'énergies vertes : électricité, chaleur, biocombustible, carburant BioGNV, biofertilisant et aussi du biométhane qui sera réinjecté dans le réseau de gaz. Liger est aussi le seul en Europe à valoriser jusqu'à 42 types de déchets, selon les responsables du projet (...) L'unité de méthanisation et ses deux digesteurs, deux énormes cuves vert bouteille de 25 mètres de haut alimentés par 48.000 tonnes de déchets de l'industrie locale, notamment les cosses et fanes de légumes de l'entreprise D'aucy, 8.000 tonnes d'excédents agricoles, comme le lisier des élevages porcins, et 4.000 tonnes de boues et effluents provenant des stations d'épuration. La méthanisation est un processus de fermentation des déchets organiques en milieu anaérobie qui produit du biogaz. Les résidus de cette fermentation seront récupérés au bout de 55 jours et transformés en fertilisant et combustible. **Ce combustible, le Bio GNV, qui n'émet quasiment pas de particules fines, sera ensuite utilisé dans les trois camions verts qui collecteront les déchets dans un rayon de moins de 20 kilomètres.** La boucle est bouclée et recommence à l'infini, se réjouit-on chez Liger, fiers de cette économie circulaire."

November 2, 2016. **C'est officiel ! Le développement de la mobilité propre en France s'appuiera sur le GNV et le bioGNV.** "La Programmation Pluriannuelle de l'Énergie (PPE), instituée par la loi relative à la transition énergétique pour la croissance verte, fixe les priorités d'actions des pouvoirs publics dans le domaine de l'énergie. Pour la première fois, avec la PPE, la France se dote d'une stratégie énergétique globale et décrit ses priorités en terme de politique énergétique. Le Décret n°2016-1442, du 27 Octobre 2016, définit la programmation Pluriannuelle de l'Énergie en France pour la période 2016 – 2023. **Pour le développement de la mobilité propre, la PPE fixe deux objectifs qui concernent le GNV et le bioGNV : -Atteindre une part de 3 % des poids lourds roulant au GNV en 2023. -Viser une part de 20 % du bioGNV dans la consommation de GNV en 2023.**"

November 1, 2016. **La filière biométhane veut s'imposer dans le débat politique** par Frédéric De Monicault , Le Figaro. "Cédric de Saint-Jouan, le président du collectif France Biométhane, réclame un véritable soutien aux pouvoirs publics. Dans un appel adressé aux postulants à la primaire de la droite et du centre, il souligne combien la France a besoin de gaz vert (...) A ses yeux, **la deuxième phase de la transition énergétique dans laquelle nous entrons aujourd'hui concerne les transports**, «à l'origine de près de 14% des émissions de gaz à effet de serre provoquées par l'activité humaine». Cédric de Saint-Jouan ne réfute pas les progrès présentés par le développement des véhicules électriques mais il précise aussitôt que **face à l'impossibilité de faire rouler les poids lourds à l'électrique, l'autre composante majeure de la nouvelle étape de la transition énergétique réside dans le GNV (Gaz Naturel pour véhicule) et son pendant renouvelable le bioGNV ou biométhane.** «La filière biométhane, qui en est encore à ses balbutiements, offre de nombreux avantages: produite en France, elle répond à l'objectif d'indépendance énergétique nationale, explicite le président de France Biométhane, valorisant des déchets organiques essentiellement issus des secteurs agricoles ou agroindustriels, elle offre des perspectives complémentaires à des acteurs actuellement en pleine crise de mutation et subissant de plein fouet la concurrence internationale ; enfin modèle d'économie circulaire, elle limite le recours à l'enfouissement des déchets et fournit du digestat aux agriculteurs qui économisent alors des engrais chimiques.» Dans ces conditions, la conclusion de Cédric de Saint-Jouan se veut aussi forte que limpide: **pour la France, l'enjeu de cette deuxième phase de la transition énergétique appliquée au gaz est de faire émerger une industrie nationale du biométhane forte et exportatrice en ingénierie.** Cela ne signifie pas non plus que rien n'a été fait jusqu'à présent: France Biométhane rappelle que des mesures de soutien ont été prises dans plusieurs pays européens, dont la France et l'Angleterre qui ont institué chacun un tarif d'obligation d'achat du gaz vert en 2011. Mais l'évolution entre les deux pays est contrastée: cinq ans après l'instauration de cette mesure, l'Angleterre produit 3,5 térawattheures (TWh) de gaz vert quand la France ne produit que 0,3 TWh. Ce chiffre très bas dans l'Hexagone par rapport à son voisin britannique est étayé par le fait que la France ne recense aujourd'hui que 24 sites en exploitation, dont les deux tiers relèvent

de groupements d'agriculteurs - quand les autres unités sont portées par des collectivités locales à partir de boues d'épuration, d'ordures ménagères ou de décharge. En 2018, GRDF (le réseau de distribution de gaz en France) prévoit une centaine d'unités de biométhane en exploitation, qui devrait permettre d'approcher l'objectif de cette année-là fixée à 1,7 térawattheure (TWh), pour un objectif final de 10% de biométhane dans la consommation de gaz français en 2030.”

October 31, 2016. **Biomethane Opportunities in Europe** by Rossella Mimmi. “The reason why biomethane is gaining so much consideration lately is due to the growing attention to the environment (see e.g. European Climate and Energy Policy). All the countries are encouraged to reduce their emissions and increase their efforts to use renewable energies. Biomethane is a renewable gas, and its injection into the grid contributes to meet the European Union renewable energy targets. For this reason, **it’s showing the highest level of growth of any gas market in the world**. The implementation of biomethane can decisively contribute to the de-carbonization of the economy, helping the transition to an energy system based on sustainable resources. Europe has a potential of biomethane production between 151 and 246 billion cubic meters per year by 2025. New biogas plants will be built to produce around 2.600 MW. **Europe is the most important contributor to this growth and is expected to continue to be the leader.**”



## Energiewende 2.0: Blockchain in the energy transition

November 18, 2016. **The Blockchain Energy System Is Going To Be Great For Consumers** by Ben Schiller, FastCo. “Make your own power, sell your own power—at prices you decide. Traditionally, energy systems flowed in one direction: from big power producers to consumers. Now, with more people getting rooftop solar panels, they're increasingly two-way: homes send excess power back to utilities, reducing their household bills. **In the future, we may see a third**

**change: people trading power not only with utilities, but also with each other.** Several startups are now working on the trading aspect, including [Power Ledger](#) in Western Australia. It's launched trials based on blockchain technology, which offers an inviolable internet-based record of transactions as they take place. Blockchain came to prominence with the bitcoin virtual currency, but increasingly it's being used to track and authenticate all kinds of asset trading, from stocks and bonds to electrons (...) Blockchain networks offer **a way for households to leave the main grid and set up independent co-operative microgrids, where people trade power according to need** (as in [this pilot in Brooklyn](#)). They also could help incorporate people without solar panels, allowing them to trade with people who do. (...) **the building blocks are available for a completely different energy system based around distributed generation and decentralized structures.** We may still need utilities, but blockchain could help change our relationship with big companies, offering more local and household control.”

November 15, 2016. **Blockchain: The energy industry is preparing for a new digital method of conducting transactions.** “A study by dena (German Energy Agency) and ESMT (European School of Management and Technology) shows: Pioneers are already looking for business models/potential uses, including trading platforms, billing, metering, mobility and network management. The German energy industry is starting to prepare for a new digital method of conducting transactions that could permanently change the industry. In a survey of 70 executives, half of the respondents said they were already experimenting with so-called ‘blockchain’ technology or planning to do so. This is what a joint study by the Deutsche Energie-Agentur (dena) – the German Energy Agency – and ESMT Berlin shows. **Blockchain is a decentralised method of exchanging, encrypting and storing data securely and directly. This creates new opportunities for the energy market, such as a more direct exchange between decentralised energy producers and consumers.** ‘In the second phase of the energy transition, it is important to combine the various components and stakeholders in the energy system intelligently,’ said Andreas Kuhlmann, dena’s Chief Executive. ‘Blockchain technology offers a promising approach to this. It is a good sign that some of the pioneers in the energy industry are taking a constructive look at this trend. It is impossible to say today if it will lead to successful business models or not. But the energy transition requires innovative stakeholders who have the courage and desire to shape the future’ (...) The ‘**Blockchain in the energy transition**’ study was based on a survey of 70 executives from the energy industry and energy-related industries in Germany. Energy suppliers, network operators and energy service providers were amongst those represented.”

See also: March, 2016. **Biogas and the digital disruption into energy**, BioGAS+ newsletter

