



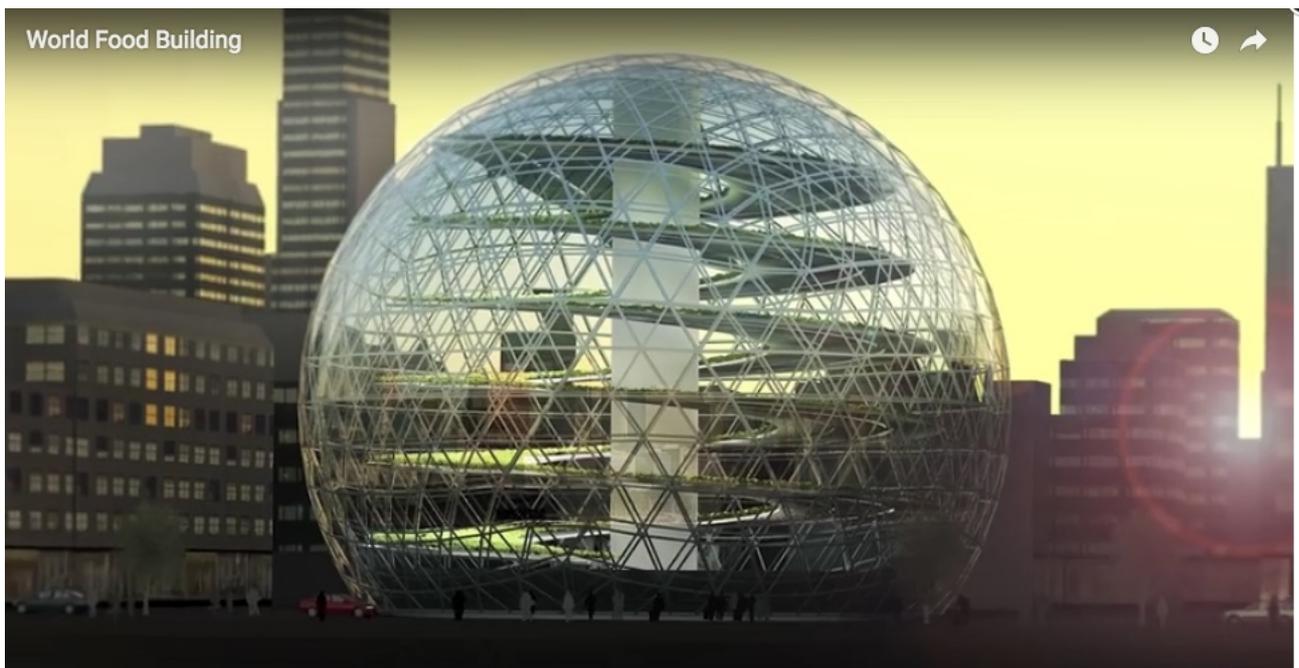
The biogas in the global shift

November 28, 2017. **Young Yemeni wins top UN Environmental prize. Omer Badokhon** wins Young Champion of the Earth prize **for biogas project that will help to fight climate change, deadly indoor air pollution and the spread of cholera** [the largest known cholera epidemic recorded by the World Health Organization]. “UN Environment made Yemeni engineer Omer Badokhon a Young Champion of the Earth for his work on biogas plants which could improve thousands of rural livelihoods **in his war-stricken homeland** (...) Omer’s project will help to solve some major problems in Yemen, and can be replicated to elsewhere to deal with global efforts to reduce climate change and protect human health. The small biogas plants will reduce household organic waste, which emits significant amounts of methane and is a major contributor to climate change, and indoor air pollution, which claims the lives of around 4 million people across the globe each year. In Yemen, over 3 million people still cook over open fires. Additionally, the project will help to reduce certain diseases known to be spread or exacerbated by the dumping of organic waste, such as cholera, which has affected nearly half a million Yemenis in 2017 alone.”

November 24, 2017. **Carlsberg unveils first carbon-neutral brewery** by George Ogleby, Edie. “Beverage giant Carlsberg has launched its first brewery with zero-carbon emissions, as part of the Danish firm's overarching pledge to achieve carbon-neutral status by 2030. **Carlsberg’s Sverige brewery in Sweden now runs completely on biogas and green electricity.** Biogas from the brewery’s own waste water generates 26% of the brewery’s thermal energy. The remaining 74%, which has for many years been natural gas, has now been converted to biogas thanks to a partnership with energy supplier Ørsted AB (...) Carlsberg is one of only three major companies to have set and approved a science-based target to reach a 1.5C ambition in line with the Paris Agreement (...) “Seeing this first Carlsberg brewery make this transition so soon is very encouraging and should be seen as **a demonstration of how industries can embrace new technologies to mitigate climate change**” (...) Carlsberg has followed in the footsteps of its competitor Heineken, which unveiled the world's first large-scale carbon-neutral brewery.”

November 22, 2017. **Suecia ya prepara su primer invernadero vertical: 4.335 m² de cultivo en una superficie de sólo 430 m²** by Yúbal FM, Xataka. “La agricultura vertical lleva tiempo presentándose como una de las principales soluciones a los problemas de las ciudades modernas, permitiéndonos generar más alimentos en un espacio inferior, dejando de paso una menor huella ecológica. Suecia es uno de los países donde más en serio se la están tomando, y ya han empezado a construir un enorme invernadero vertical de 17 plantas. El proyecto corre a cargo de la empresa sueca Plantagon, que junto a la constructora Sweco levantarán su primera planta de demostración en Linköping. Su idea es la de poder **producir la máxima cantidad de alimentos utilizando la menor cantidad de agua y superficie, y reciclando los desechos generados por otras industrias cercanas.** Su nombre es "Centro de excelencia para la agricultura urbana" (...) La localización de este invernadero tampoco ha sido elegida al azar, ya que se ha situado cerca de varias plantas de algunas de las empresas de tecnología limpia más importantes de Suecia. Entre ellas hay por ejemplo una empresa de biogás que recicla los desechos orgánicos de hogares, restaurantes e industrias alimentarias. Al generar el **biogás** con estos desechos, la planta produce calor, CO₂ y nutrientes, los cuales son llevados al invernadero para aprovecharlos. De la misma

manera, la basura orgánica generada por el invernadero es llevada también a la planta de biogás para que se utilice, creando una cadena de intercambio de recursos entre ambas empresas”.



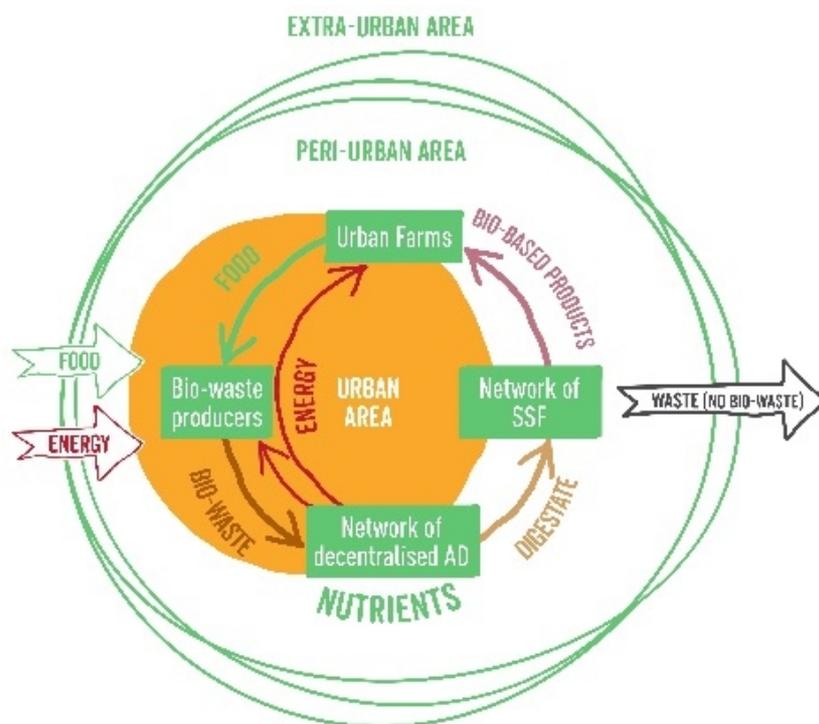
*Combining urban agriculture, innovative technical solutions and architecture to meet the demand for efficient food production within cities. **Plantagon** calls this process Agritechure*

context:

November 7, 2017. **Why skyscraper farms could be the answer to the world's food problems** by Tessa Love, World Economic Forum. “ Mainstream agricultural practices have a few major problems in need of innovative solutions. For one, industrial farming practices are hard on the environment. Farms emitted 6 billion tons of greenhouse gases in 2011, or about 13 percent of total global emissions. That makes the agricultural sector the world’s second-largest emitter, after the energy sector. Additionally, 38 percent of the world’s total land area was used for agriculture in 2007 and agriculture is responsible for over 70 percent of global freshwater consumption. On top of that, the way we grow our food now is not sustainable to feed a growing global population, which is expected to reach 10 billion by 2050. We'd have to use more land, more environmentally harmful farming practices and ship more food across continents and the globe, particularly to reach people in concentrated urban centers. In short, it's not realistic. And facing this fact, we have to come up with better solutions. Swedish company Plantagon believes they may have found an answer. The company has developed plans for "**plantscrapers,**" massive vertical greenhouses meant for growing large-scale organic farms in cities, using less energy and a smaller carbon footprint than the way we grow food now.”

November 20, 2017. **La méthanisation à domicile, solution pour les déchets de cuisine** par Loïc Chauveau, Sciences et Avenir. “A l’occasion de la semaine de réduction des déchets, focus sur une technologie qui pourrait bien révolutionner la gestion des résidus organiques produits par les ménages : la micro-méthanisation (...) «L’idée, c’est d’utiliser cette technique à une échelle beaucoup plus petite **pour équiper des quartiers d’habitation ou des zones de restaurants,** explique Axelle Degueurce, chercheuse à l’Irstea de Rennes. Les ménages pourront ainsi voir à proximité de chez eux la transformation de leurs déchets en ressource énergétique » (...) Avec nos partenaires européens de **Decisive**, nous allons tester en 2018 deux configurations, l’une d’une capacité de 200 tonnes de déchets par an, soit la production de 800 à 1000 ménages, l’autre de 50 tonnes plus adapté à de la restauration collective », détaille Pierre Thiriet, également chercheur à l’Irstea Rennes. Le démonstrateur de 200 tonnes représentant le volume de deux conteneurs de transport international sera installé sur le campus de l’Université de Barcelone, partenaire du projet, où seront traités les déchets des restaurants et des résidences universitaires. Celui de 50 tonnes (soit un volume de 3 à 5 m3) sera posé à l’école horticole d’Ecully dans la banlieue de Lyon. Cet

établissement qui comprend une ferme urbaine appelée ReFarmers anime par ailleurs un réseau de collecte de biodéchets pour étudier le compostage (...) **Que peut-on attendre d'une telle technologie?** A coup sûr, un changement de regard sur ces détritrus qu'on jette. Avec la micro-méthanisation, le déchet ne part plus dans une benne au petit matin vers une banlieue lointaine. Il est traité à proximité et produit par ailleurs de l'énergie. « On peut ainsi tirer satisfaction du fait que le déchet de cuisine que l'on a trié sert à vous chauffer ou à vous éclairer », conclut Axelle Degueurce.”



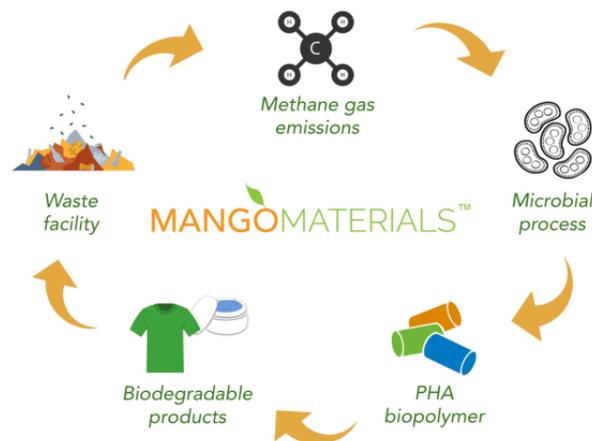
DECISIVE proposes to develop and demonstrate a decentralised management scheme for innovative valorization of urban bio-waste through micro-scale anaerobic digestion (AD) and solid state fermentation (SSF) within the urban and peri-urban areas

November 18, 2017. **Stephan Martinez, le restaurateur qui fait les poubelles** par Eliane Patriarca, Le JDD. “Restaurateur gouailleur et engagé, Stephan Martinez est passé maître dans l'art d'accueillir les restes. Pionnier du compostage des biodéchets alimentaires, il a créé une entreprise prospère (...) Aujourd'hui, il est à la tête d'une petite société qui **valorise en méthane ou engrais les déchets organiques de quelque 400 restaurants parisiens**, des tables étoilées comme Septime ou de palaces comme le Bristol, aux cuisines de Ladurée ou de Fauchon, en passant par le resto du Sénat, des cantines d'entreprise (Dassault, hôpital Pompidou) et des McDonald's. **Il a ainsi damé le pion aux mastodontes du déchet que sont Veolia ou Suez** (...) Les clients affluent : l'Euro de football 2016 et ses 475.000 repas, le parc des expositions de la porte de Versailles et ses 380 tonnes de biodéchets par an, les collectivités de Noisy-le-Sec, Romainville, Sevran, la Défense... Moulinot emploie désormais 25 salariés et dispose de 15 camions-bennes au gaz naturel pour quelque 4.500 tonnes collectées, méthanisées ou compostées cette année.”

November 20, 2017. **Total teams up with GoodPlanet Foundation to make pledge on offsetting emissions from company plane travel via Adilabad biogas project** by Liz Gyekye, editor of Bioenergy Insight. “Oil giant Total has teamed up with NGO GoodPlanet Foundation to ink an

agreement for a project **to deploy 8,400 biodiegesters in Telangana State, India**, to improve the lives of 45,000 people and contribute to tackling climate change (...) This **voluntary carbon neutrality initiative, eligible for certified carbon credits**, will avoid the emission of 50,000 tonnes of carbon dioxide equivalent a year for a period of ten years. That is equivalent to all emissions generated by plane travel by Total employees (...) Yann Arthus-Bertrand, president of the GoodPlanet Foundation, said: “Since 2006, I have been encouraging companies and individuals to offset the greenhouse gas emissions generated by their air travel. That’s why the GoodPlanet Foundation has created the Social Carbon Offsets programme. “Our projects are eligible for certified carbon credits and deliver positive outcomes for local communities that can be measured in terms of the 17 UN Sustainable Development Goals. I’m very pleased that **Total will be working with us to measure, reduce and offset carbon emissions from its air travel in a project that will provide 45,000 people in India with clean energy.**”

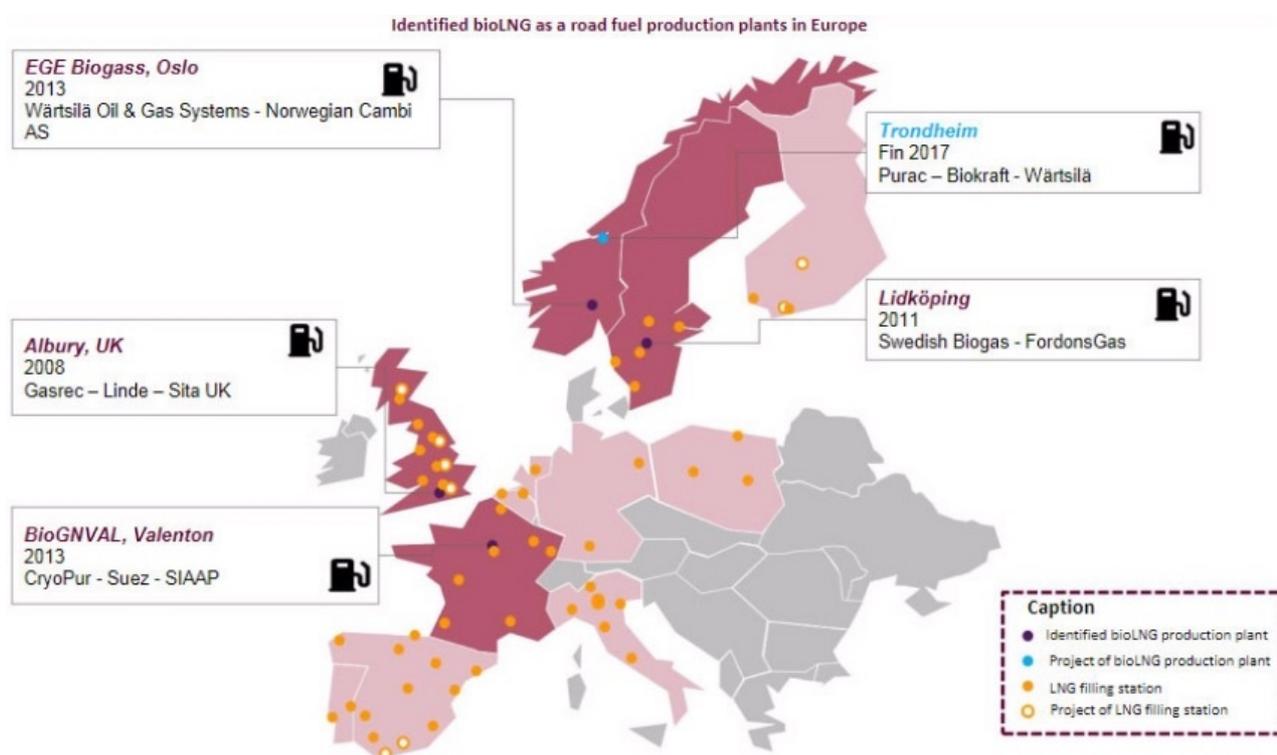
November 8, 2017. **Loowatt Offers Emergency Relief in Madagascar Central Prison.** “In early October, while pneumonic plague was spreading in Antananarivo, the capital city of Madagascar, the youth block of the city’s central prison encountered an untimely and potentially deadly situation (...) In just two days, Loowatt was able to deploy toilets to the prison and teach the children on the hygienic use and servicing of the toilets. This quick and efficient intervention highlights the versatility of Loowatt’s technology, particularly in disaster relief situations.” **Loowatt is a Waterless Energy-Generating Toilet Technology.** The Loowatt toilet uses a patented, simple and efficient sealing technology to contain human waste within biodegradable film, with a unique odor-inhibiting system. The waste is then stored in a cartridge for periodic emptying. **The toilet is designed for linking to anaerobic digestion technology, to provide a source of biogas** for cooking, electricity, and other applications. This creates the exciting opportunity to offset capital costs with energy production.



October 3, 2017. **Mango Materials announces path to biodegradable fibers** by Anne Schauer-Gimenez, Mango Materials. “Molly Morse announced at SynBioBeta 2017 that Mango Materials has a path to biodegradable fibers. The PHA fibers are an interesting solution that allows you to have a closed-loop process and help **reduce the amount of waste generated by the textile industry.** “**The material can also reduce ocean plastic pollution.** If a T-shirt made from regular polyester is washed in a washing machine, tiny microfibers typically wash down the drain, and because they aren’t broken down at wastewater treatment plants, can make it into the ocean. Fibers from the new material would degrade at a treatment plant instead, and if a whole T-shirt happened to fall in the ocean, marine organisms could digest it.” Click [here](#) to read the entire Fast Company article: The Shirt Of The Future Will Be Made By Methane-Eating Bacteria. By using a greenhouse gas as the basis for a new material, Mango Materials wants to create a new model of garment production that cleans up the atmosphere as it makes us new clothes.”

Climate-friendly mobility: Biomethane for transport is spreading

November 29, 2017. **Etude Sia Partners : le GNL comme solution pour une mobilité plus vertueuse** par Philippe Schwoerer, Gaz Mobilité. “L’étude diffusée par la société de conseil Sia Partners au début du mois a pour objectif de mettre en avant le gaz naturel liquéfié comme **solution de substitution aux carburants pétroliers lourds face au durcissement des réglementations environnementales dans le secteur du transport (...)** Sia Partners s’attend, à horizon 2030, à une demande totale de GNL carburant, marin et routier confondus, d’environ 40 millions de tonnes par an. Le cabinet souligne la réorientation prise par certains pétroliers, comme Total, qui montre l’intérêt que la filière suscite chez les acteurs historiques de la distribution des produits fossiles. Dans les conclusions de son étude, le cabinet accorde une large place au bioGNL, qui sera obtenu de la liquéfaction de biométhane pour un impact encore plus vertueux au service de la mobilité à gaz de demain. Toutefois, le coût de production de ce gaz, qui bénéficie peu des économies d’échelle, impose parfois des scénarios particuliers, comme en France où il est conseillé de l’injecter dans le réseau pour en retirer un meilleur rendement financier.”

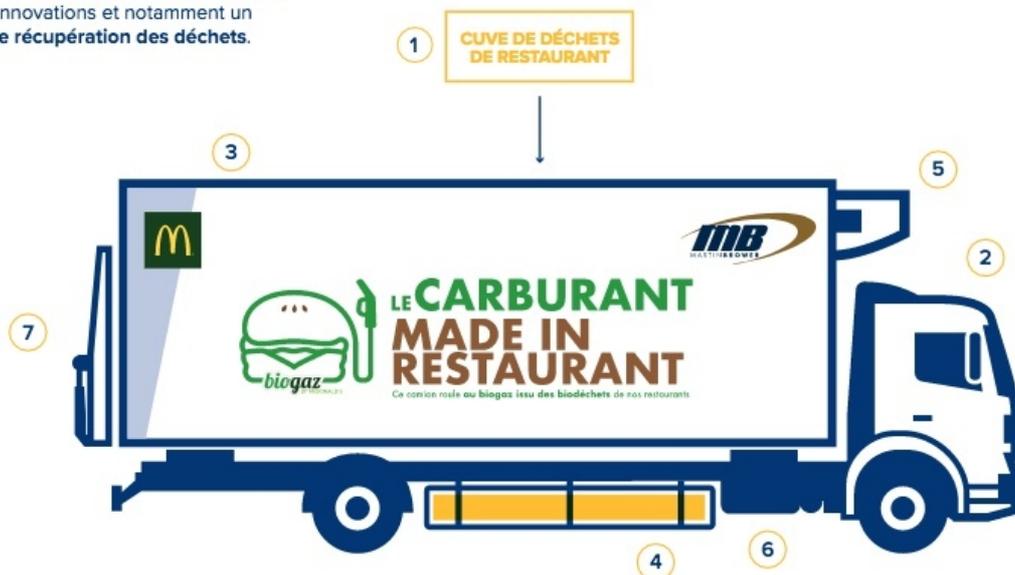


November 29, 2017. **La depuradora de Guadalajara produce biogás para el consumo de vehículos** por Jesús Blanco Orozco, SER Guadalajara. “El coste del gas que viene de Argelia es de unos 0,70 euros el kilo, mientras que este biogás de la depuradora saldría por 0,20 euros. Es decir 3 veces y media más barato. Hay otras depuradoras, como la de Valdemingomez, que también realizan proyectos de este tipo pero utilizan otros sistemas distintos al de Guadalajara y les sale un coste de 0,70 euros kilo con lo cual no sería tan competitivo”.

November 28, 2017. **FRAIKIN et Martin Brower partenaires d'une innovation mondiale : "le carburant made in restaurant" !** “Fin 2016, Martin-Brower a sollicité FRAIKIN pour développer une solution technique permettant de récupérer les déchets de cuisine afin de les recycler et les utiliser comme biocarburant. Nait alors la conception d’un système de récupération des déchets

installé sous **un véhicule roulant au BioGNV issu de la méthanisation des déchets de cuisine.**
 Une première mondiale !”

Ce premier véhicule en phase de test est un porteur 26t **IVECO** qui dispose d'un certain nombre d'innovations et notamment un **système de récupération des déchets.**



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| <p>1 Cuve de déchets de restaurant</p> <p>2 Porteur 26t GNV 330 ch IVECO alimenté en BioGNV</p> <p>3 Carrosserie multi-température multiplexée CHEREAU permettant de faciliter les opérations de livraison: ouverture du rideau relevant arrière, commande de l'éclairage intérieur, mise en marche du rideau d'air associés à l'utilisation du hayon élévateur</p> <p>4 Dispositif de récupération de déchets de cuisine fonctionnant en mode aspiration sous vide créé par le système d'air comprimé du véhicule permettant ainsi un fonctionnement silencieux s'inscrivant dans le label Piek.</p> | <p>5 Groupe frigorifique électrique CARRIER fonctionnant à partir d'une génératrice entraînée par pompe et moteur hydraulique permettant un fonctionnement silencieux tout en préservant les performances frigorifiques et ce quel que soit le régime du moteur du véhicule</p> <p>6 Boîte de vitesse automatique ALLISON disposant d'une prise de force spécialement adaptée à l'entraînement d'une génératrice électrique</p> <p>7 Hayon élévateur connecté DHOLLANDIA permettant la collecte d'informations issues des livraisons, charge embarquée, nombre d'utilisations, consommation électrique...</p> |
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November 27, 2017. **Swedish-produced biogas is being competed** by Odd Clausen, Sveriges Radio. "Swedish production of biogas has major problems. Biogas has been described as an important part of the conversion from fossil fuels, but in recent years Swedish production has become unprofitable because of the competition from cheaper Danish gas (...) The urgent problem at the moment is that we are experiencing difficult competition with imported biogas and it is because it has dual support in terms of production support and tax sanctions, which means that the Swedish-based biogas is being competed"

November 23, 2017. **Itaipu apresenta centro para produzir biogás para veículos.** "A usina hidrelétrica de Itaipu, compartilhada por Brasil e Paraguai, apresentou nesta quarta-feira sua primeira unidade de geração de biometano, que será produzido a partir da mistura de restos dos sistemas de água, esgoto, além de sobras de comida e capim. Batizada como **Unidade de Demonstração de Biogás e Biometano, a unidade pode produzir 300 metros cúbicos de biometano por dia, o suficiente para abastecer 77 veículos elétricos.** "Nós temos resíduos para fazer outros projetos. Uma ideia seria que a Prefeitura de Foz do Iguaçu pudesse utilizar o biogás", explicou o diretor do programa, Rodrigo Régis, que também citou a **possibilidade de o combustível abastecer os ônibus que levam os turistas até as Cataratas do Iguaçu.**"

November 22, 2017. **Inauguration de la 1ère station Bio GNV grand public de Bretagne** par

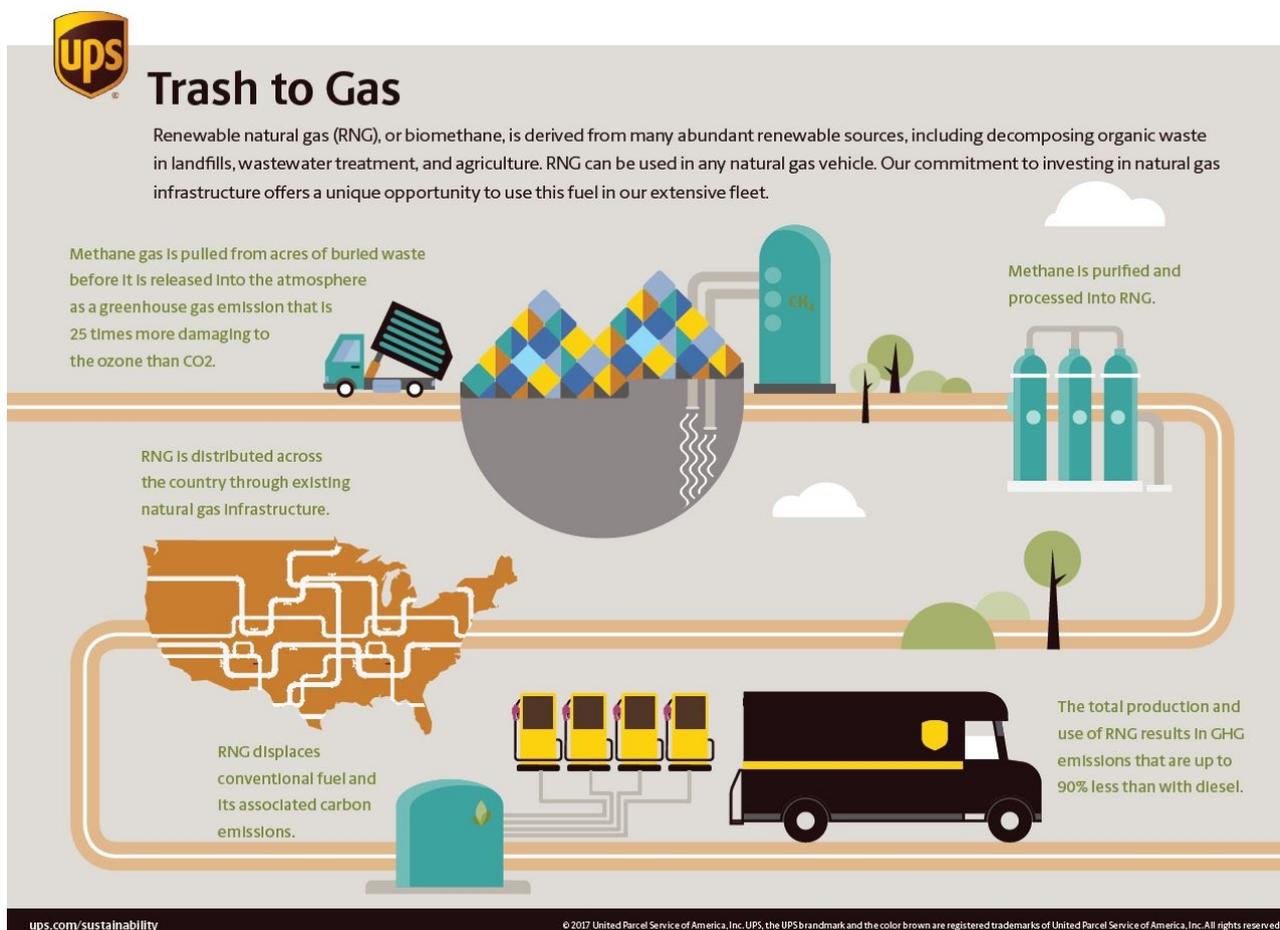
Auriane Kerbrat, Transportissimo. “Un an après l’inauguration de son unité de méthanisation et deux ans après la première station Bio GNV destinée aux flottes des collectivités et entreprises, LIGER* inaugure la 1ère station Bio GNV de Bretagne ouverte au grand public (...) Si en 2016, 30 stations françaises proposent du Bio GNV, le potentiel d’ici 2025 est de 300 stations.”



November 21, 2017. **Eesti Gaas to start selling biomethane in gas stations** by LETA/TBT Staff, The Baltic Times. “The Estonian natural gas and electricity seller Eesti Gaas and Rohegaas OU have entered into a cooperation contract, according to which Eesti Gaas in the next two years will buy approximately 11 million cubic meters of biomethane which it will sell in compressed gas stations (...) **The sale of biomethane will be possible as Rohegaas OU in cooperation with Estonian Cell, the Austrian owned pulp mill located at Kunda in northern Estonia, is to establish a biomethane production unit in Kunda, which is the first in the Baltics and will start operating at the beginning of next year.**” Eesti Gaas makes its business decisions in an environmentally conscious manner and based on the fact that Estonia has assumed the responsibility of covering **at least 10 percent of the fuel used in transport with fuel from renewable sources by 2020, a third of which would be biomethane**”

November 20, 2017. **UPS Boosts Supplies of Renewable Biogas** by Leon Kaye, TriplePundit. “UPS announced that it has entered into an agreement to purchase up to 11.5 million gallon equivalents of renewable biogas a year well into the next decade. This gas, which is also known as **renewable natural gas (RNG) or biomethane, is interchangeable with conventional natural gas, by which much of UPS’ fleet has long been fueled.** Proponents of the consumption of this biogas note that its adoption can reduce greenhouse gas emissions by up to 90 percent when compared to what is emitted when using conventional diesel. The biogas that UPS will source will come from sources such as municipal landfills, livestock operations and waste treatment plants. Not only can this surge in biogas use help reduce the shipping and logistic company’s carbon footprint, there is also a huge environmental benefit as well. While total methane emissions, pound for pound, are only one-eighth the amount of carbon emissions released in the U.S., the Environmental Protection Agency (EPA) has concluded that due to methane’s potency, its environmental impact is more than 25 times greater than that of carbon dioxide over a 100-year period. UPS has long been open to using its global feet as a laboratory for alternatives to fossil fuels

(...) The result will be a huge increase in the amount of renewable biogas UPS says its fleet will consume this year. In 2016, of the 61 million gallons of natural gas that fueled its delivery trucks, 4.6 million gallons were from renewable sources – and UPS expects that latter number to almost triple, to 14 million gallons of renewable fuels by the end of 2017. UPS’ business customers will be pleased with this news as well, as cleaner fuels translate into a cleaner supply chain for them, too.”



November 16, 2017. **Reconfirmed: Transport is Europe’s biggest climate problem** by Thomas Earl, Transport & Environment. “As the Commission unveiled their 2nd Mobility Package and proposal to cut new car and van CO₂ emissions, the latest data from the European Environment Agency (EEA) reconfirms that transport is Europe’s biggest climate problem. **Worse, transport greenhouse gas (GHG) emissions in the EU have risen for the third year running.**”

November 13, 2017. **Montbéliard ambitionne de faire rouler ses bus au biogaz, issu de la méthanisation** par Christophe Beck, France Bleu. “L’agglomération de Montbéliard a fait le choix de développer une filière de méthanisation afin d’utiliser les effluents de l’élevage comme carburant pour sa nouvelle flotte de bus. Un contrat de ruralité sera mis sur pied afin d’organiser la filière (...) Le nouveau périmètre de l’agglomération étendue à 72 communes offre le potentiel de production de biogaz suffisant pour faire rouler l’ensemble de la flotte de bus de la CTPM. Pour Damien Charlet, vice président de PMA en charge du nouveau réseau de bus Evolity, **“La collectivité se félicite de devenir autosuffisante en carburant pour ses bus. D’autant que l’opération permet aussi de soutenir l’agriculture du territoire, en leur proposant ce nouveau débouché.”**”

October 27, 2017. **10 agriculteurs ouvrent une station-service au biogaz** par Benoît Egon, Amazone. “Nous avons souhaité aller plus loin en proposant aux transporteurs, industriels et collectivités, notre biométhane sous forme de carburant pour les véhicules légers et les poids lourds. Ce gaz vert issu majoritairement des effluents d’élevage de nos exploitations sera prochainement

disponible pour tous! Il n'émet pas de particules fines, son bilan carbone est presque nul, enfin il permet de diminuer le bruit moteur de 30%. Ce carburant issu de la méthanisation agricole sera appelé "Agri carbur". La station-service automatisée située à 300 m des méthaniseurs d'Agribiométhane, a ouvert début septembre. Elle est conçue avec deux voies poids lourds et une voie véhicule léger. Grâce à un terminal de paiement, elle est accessible 24h sur 24 (...) "A 0.90 € HT/kg d'Agri carbur", nous avons la volonté de proposer une énergie verte produite localement et moins chère que les carburants pétroliers. Grâce à la production de notre unité, nous allons pouvoir approvisionner en carburant l'équivalent de 800 véhicules légers ou de 40 poids lourds par an."

European panorama of renewable gas

November 28, 2017. [Towards a European biomethane market – BIOSURF and Bin2Grid EU projects present their final results](#). "The projects have promoted the collection of waste materials and the development of grid injection of biomethane in order to create an **"embryonic" European biomethane market and encourage its use as a transport fuel** (...) To achieve this goal, BIOSURF produced comprehensive guidelines to establish national biomethane registries, together with the establishment of the European Renewable Gas Registry (ERGaR) to foster cooperation among biomethane national registries. ERGaR will continue its activities beyond the end of the project, aiming to become the Europe-wide recognised organisation for administering mass balancing volumes of biomethane virtually distributed along the European natural gas network. Lorenzo Maggioni from Consorzio Italiano Biogas (CIB) showcased the creation of an embryonic European biomethane market, providing the example of Italian, Austrian and French partners of BIOSURF that signed a Memorandum of Understanding aimed at defining conditions and rules to exchange biomethane Guarantees of Origin. This initiative is a first step for the exchange of biomethane between different Member States, and should be replicated in other countries to further develop the biomethane market. The conference was closed with a series of policy recommendations, followed by a panel discussion of experts. Jan Stambasky, President of EBA, highlighted the need to recognise the domestic natural gas network of each Member State as a single logistical facility as well as the necessity for each European country to create a national biomethane registry, and stressed that preferential access to the natural gas grid should be provided to biomethane in every Member State. **The panel confirmed the great potential of biomethane in decarbonising Europe and reducing energy imports, and foresees an increase in production and usage in transport and heating and cooling** thanks to a growing generation stemming from the power-to-methane technology. Project's representatives agreed that further action is required to take full advantage of this positive trend, hence intending to pave the way for a future project."

November 28, 2017. [UK: Industrial Strategy and other important AD news](#) - a message from ADBA's Chief Executive, Charlotte Morton. "As many of you painfully know, the laying of the Renewable Heat Incentive regulations has been holding up at least £200m of investment, which is the main reason I visited No. 10 Downing Street last week. It was a very helpful meeting, so given also the publication today of the government's long awaited Industrial Strategy, I wanted to take this opportunity to update you on recent developments and highlight key points from today's government announcement (...) Most of you will be aware that in October, the government published its long-awaited Clean Growth Strategy, setting out at a high level how it intends to reduce carbon emissions across heat, power, transport, farming, and waste to meet the Fourth and Fifth Carbon Budgets, which set strict limits on greenhouse gas emissions up to 2032. **There is currently a big policy gap for meeting these legally binding Carbon Budgets, and AD can play an important role across multiple sectors, which is why we made decarbonisation the main theme of the ADBA National Conference this year.** There are also huge opportunities arising

from potential sector deals already under discussion in agri-tech and the bioeconomy as part of the government's Industrial Strategy (...) In addition to complementing a sustainable agri-tech industry, upcoming changes to the way farmers receive support as a result of the UK leaving the European Union means that **in a post-Brexit world, AD offers farmers the opportunity to diversify their income streams and reduce costs** through the production of on-site heat and power, green transport fuel to power farm vehicles, and nutrient-rich biofertilisers that can help to restore soils. Thus farming is another area where huge opportunities are emerging for AD. Recent indications from Environment Secretary Michael Gove that future farming support payments may be linked to environmental management are a welcome development in this regard. We are therefore very excited that, in today's Industrial Strategy, the government has recognised the importance of the circular economy with the announcement of a new Bioeconomy Strategy that specifically highlights the importance of soil health, biotechnology and sustainable farming as critical to the country's economy future. **For the government to have confidence to support our industry, however, it is vital that we operate our plants well, minimising risks to those who work around and in them and to the environment.** After two and a half years in development, and with huge support from our members, regulators and other stakeholders, I am delighted that we will be launching ADBA's pioneering AD Certification Scheme at the conference to support AD operators in meeting good operational, health and safety, and environmental standards (...) In addition to discussing the RHI regulations in my meeting at No 10 last week with Sir John Randall, the Prime Minister's Environment Adviser, I was pleased to hear from him that **the government is debating the issue of food waste at the highest level. Feedstock availability remains a challenge for AD plants;** as many as half of households in England still don't have separate food waste collections, and even where these do exist, food waste recycling rates are low (...) Finally, **recent reforms to the Renewable Transport Fuel Obligation may open up more opportunities for biomethane for transport,** which the Department for Transport has clearly stated it wants as a low-cost, clean fuel option for buses and HGVs in particular to help decarbonise transport."

November 27, 2017. **Tableau de bord : biométhane injecté dans les réseaux de gaz. Troisième trimestre 2017.** "Fin septembre 2017, **38 installations injectent du biométhane, après production et épuration de biogaz, dans les réseaux de gaz naturel. Leur capacité s'élève au total à 574 GWh/an, en progression de 40 % par rapport à la fin de l'année 2016.** Une capacité supplémentaire de 164 GWh/an a été installée au cours des trois premiers trimestres 2017, contre 95 GWh/an sur la même période en 2016. Les petites installations, de capacité unitaire inférieure à 15 GWh/an, représentent la moitié de la capacité de production totale du parc national. Les unités de méthanisation constituent l'essentiel du parc (79 % de la capacité totale). La capacité des 318 projets en file d'attente atteint 7 028 GWh/an au 30 septembre 2017, en hausse de 39 % depuis la fin 2016. La production de biométhane injecté dans les réseaux poursuit sa progression sur le troisième trimestre 2017. À 100 GWh, elle augmente de 3 % par rapport au deuxième trimestre 2017. Trois régions, Grand Est, Hauts-de-France et Île-de-France, concentrent 53 % des capacités installées au 30 septembre 2017 et 54 % des injections depuis le début de l'année."

November 23, 2017. **Biomethane: Generation of renewable natural gas can be increased tenfold in Germany.** "dena biogas partnership outlines potential for expansion by 2050 / Greater incentives in traffic, heat and electricity required / Kuhlmann: "We need a clear political commitment to the importance of renewable gases for the energy transition". **The production of biomethane in Germany can be increased a good tenfold by 2050, from today's 9 to around 100 terawatt hours per year.** This is the result of a **strategy paper** that has developed the biogas partnership of the German Energy Agency (dena) on the basis of current studies. The prerequisite for the expansion is to improve the framework conditions for the use of biomethane in the transport, heating and electricity sectors (...) "All studies show that biomethane can make a significant contribution to the energy transition without competing with the production of food and feed," says Andreas Kuhlmann, chairman of dena's management. "Especially where electricity, gas and heating

networks interact well, the advantages of biomethane come into their own. Biomethane is an excellent supplement to fluctuating renewable energies such as wind and solar energy. In order to open up the potentials, we have to turn on different set screws. Our strategy paper shows what policymakers should look for. **Above all, we need a clear political commitment that investment in renewable gas plants and infrastructure be recognized as a valuable contribution to the energy transition**" (...) The biogas partnership recommends concrete measures for the transport, heating and electricity sectors. **Transport: Subquota for advanced fuels and carbon credits.** Biomethane is an almost climate-neutral fuel that also produces significantly less nitrogen oxide and fine dust when burned than, for example, the Euro 6 standard for gasoline and diesel. Switching to natural gas vehicles powered by biomethane and other renewable gases would be quick and cost-effective. Therefore, biomethane should be increasingly used in agriculture, public transport and cars. In the long term, biomethane in the form of liquefied biogas (Bio-LNG) is particularly useful in heavy-duty and shipping traffic. In order to realize the potential, the energy subquota for advanced fuels in the Renewable Energy Directive should be increased from 0.05 to 0.2 percent in 2020 and then by 0.1 percent annually. In addition, car manufacturers should be able to apply the use of sustainably produced fuels such as biomethane to their CO₂ fleet targets. Finally, there is a need for a gas mobility strategy and the development of an LNG filling station network. **Heat: more renewable process heat and promotion via building energy law.** In the heating sector, bioenergy is currently used primarily locally in the form of waste heat from combined heat and power plants. In the future, biomethane can be increasingly used for process heat and in local and district heating networks. For industrial process heat biomethane offers a renewable alternative, which is also suitable at high temperatures of over 500 degrees Celsius. This would require incentives to reduce the CO₂ intensity of industrial process heat. Biomethane can be used to increase the share of renewable energies in grid-connected heat supply via local and district heating grids. As a result, expensive interventions in existing heating systems could be spared in some places. To make this possible, the introduction of CO₂ limits for district heating would make sense. Alternatively, the efficient use of biomethane in combined heat and power plants (CHP) could be promoted, for example as part of the planned building energy law. **Electricity: larger heat storage and connection to local and district heating networks.** The electricity sector is less concerned with development than with optimizing biomethane use. Electricity from biomass should only be generated in efficient cogeneration, either as a by-product of heat generation or if cogeneration plants contribute to ensuring stability in the electricity system. By providing control energy, reactive power and other system services, biomethane CHPs can perform important functions of conventional power plants. The flexibility of biomethane-powered CHP plants can be increased by larger and better heat storage and the connection to local and district heating networks. **In addition to the consistent development of biomass sources for the production of biogas and finally biomethane, many of the existing 9,000 biogas plants can also be converted to produce biomethane** - especially if the waste heat from on-site generation of electricity is not or is insufficiently used. **Finally, the use of biomethane relies on a well-functioning gas infrastructure.** In 2050, then, largely CO₂-neutral produced biomethane and synthetic methane from power-to-gas plants should flow through the gas network."

November 20, 2017. **Sweden: "It's in a hurry with new rules for biogas."** Debate published in Aktuell Hållbarhet. **"The current tax exemption for biogas expires in 2020. After that, the future is uncertain for one of our most climate-friendly fuels.** A prompt message and broad consensus is needed about the future so that the industry can continue to invest and develop the biogas. It writes Weine Wiqvist, CEO of Waste Sweden, Linda Burenius Magnusson, Chairman of the Board 100% renewable, and Palle Borgström, LRF Co-Chair (...) The benefits of biogas are many (...) But the Swedish biogas is facing a number of challenges in the near future. Among other things, we see that the existing market for biogas is weakened when buses and taxi vehicles are increasingly electrified. Swedish-produced biogas currently has difficulty claiming imported biogas, which, in addition to tax exemption in Sweden, also receives production support in the country of

origin (...) Sweden today has an exception to EU state aid rules that allow tax exemption of biogas until the end of 2020. What happens after that, nobody knows. With just three years left of current instruments, there is a whole industry and wondering what game rules will apply. There is no favorable situation for long-term investments when they are needed as best.”

November 16, 2017. **The Danish Gas Grid Could be Filled with Green Gas in 2035** by State of Green. “The interest-based community Green Gas Denmark, published a memorandum on the 14th of November showing that by 2035, 100% of the gas in the gas grid could be green: Green gas is the gas of the future. Our calculations show that it is possible for Denmark to become the first country in Europe to become independent of natural gas. A complete green transition of the gas grid is a real possibility. It means that the EUR 7.4 billion invested by our society in **the gas grid could have an important role in the green energy system of the future**, says Carsten Jensen, managing director of Danish Gas Distribution. Since 2014, when the first green gas entered the gas grid, it has reduced Denmark’s CO2 emissions by 675,000 tonnes. That is the equivalent of the annual emission from more than 300,000 cars. Next year alone, green gas will help reduce Denmark’s CO2 emissions by 800,000 tonnes. A green and decentralised production of gas is currently being established; from 2014 to 2017, 21 biogas upgrading plants were connected to the gas grid, of which one was connected directly to the transmission grid. We have produced more green gas over the last 3 years than in the previous 30 years combined. That means that the share of green gas in the gas grid is rising, and next year we expect that 11% of the gas will be green. As such, **we are already the country in Europe with the highest share of green gas in our grid.**”

November 9, 2017. **A Ecomondo 2017 nasce l’Intesa sul (bio)metano.** “Nasce una struttura partecipata dalle principali realtà del settore; al via attività congiunte per promuovere il biometano. Presentato a Ecomondo (Fiera di Rimini) il **Protocollo d’Intesa tra i membri della Piattaforma Tecnologica Nazionale sul (bio)metano** (...) Nei giorni in cui si tiene la conferenza COP23 di Bonn e nel pieno della fiera Ecomondo, i membri della Piattaforma, le cui attività saranno coordinate da CIB e CIC, si sono impegnati a costituire una struttura organizzativa composta da rappresentanti di tutte le realtà coinvolte. Un incontro di cui Ecomondo, la principale fiera internazionale dedicata alla green e circular economy, si è fatta promotrice, stimolando la nascita di questo soggetto. Obiettivo della Piattaforma e del Protocollo è quindi dare impulso concreto allo **sviluppo del settore che potrebbe essere innovativo per la bioeconomia nei prossimi anni**. Con un adeguato sistema legislativo a supporto, infatti, l’Italia sarebbe nelle condizioni di raggiungere una produzione di 10 miliardi di m3 di biometano al 2030, di cui almeno 8 da matrici agricole (pari a circa il 12-13% dell’attuale fabbisogno annuo di gas naturale), non solo senza ridurre il potenziale dell’agricoltura italiana nei mercati alimentari, ma accrescendo la competitività e sostenibilità delle aziende agricole. La capacità di coprire il fabbisogno italiano annuo passerebbe così dall’attuale 12-13% al 25%. I nuovi investimenti creerebbero, inoltre, 15 mila nuovi green jobs. **Già oggi l’Italia è il secondo produttore di biogas europeo dopo la Germania e il quarto produttore mondiale dopo Cina, Germania e Stati Uniti** (...) Il CIC stima ad esempio che entro il 2020 si arriverà a una raccolta di rifiuti organici intorno a 8 Mton/anno, di cui 6 Mton/anno costituiti da Forsu. Se tutta la frazione umida dei rifiuti urbani fosse riciclata negli impianti dedicati, oltre ai 2 Mton/anno di fertilizzante organico si potrebbe generare un quantitativo di biometano pari a circa 300.000.000 kg/anno, più che sufficienti ad alimentare le flotte di mezzi destinati alla raccolta di tutti i rifiuti urbani prodotti. In ambito agricolo, ricorda il CIB, sono attivi oltre 1300 impianti con una potenza installata di 1.200 MW. Dal 2009 il settore della digestione anaerobica in agricoltura ha sviluppato investimenti per oltre 4 miliardi di euro creando 12 mila posti di lavoro, che potrebbero raddoppiare entro il 2020. Sul fronte dei trasporti, un veicolo a biometano, ad esempio, ha le stesse emissioni di un veicolo elettrico alimentato interamente a energia prodotta da fonte eolica, ovvero 5 gCO2eq/Km, il 97% in meno di un analogo veicolo alimentato a benzina. Inoltre, per i motori alimentati a metano e biometano sono praticamente assenti le emissioni di particolato (-90/95% rispetto al gasolio) e gli ossidi di azoto sono ridotti del 50%.”