

The year "2021" is displayed in large, white, bold, sans-serif numerals. It is set against a background of a teal-colored image showing the intricate, dark veins of a leaf.The words "OUR INNOVATIONS" are written in a bold, sans-serif font. "OUR" is in white, while "INNOVATIONS" is in a vibrant teal color. The text is centered within a solid purple rectangular banner.The text "TROPHÉES INNOVATION TROPHIES 2021" is located in the bottom right corner. To the left of the text is a large, white, stylized letter "I" that serves as a logo. The text itself is in a white, sans-serif font, with "INNOVATION" in all caps and "TROPHIES 2021" in title case.

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INNOVATION

FOR ENGIE'S STRATEGY



**“WE ARE BUILDING
TODAY THE LOW
CARBON ENERGY
SYSTEMS OF
TOMORROW.”**

Catherine Mc GREGOR
CEO



Claire WAYSAND
EVP in charge of the Corporate
Secretariat, Strategy, Research
& Innovation, Communication

ENGIE is a global energy player, focused on Renewables and Infrastructure, supporting the decarbonization of its customers. In this transformation of the energy sector, innovation is essential to invent, share, and disseminate new practices within our Group, to best serve our clients, our performance, or the safety of our employees. The Innovation Trophies help identify and accelerate the roll out of innovative technologies, practices and initiatives. For this 2021 edition, 560 projects were proposed, despite the very particular context of the COVID crisis in 2020, marking the dynamism, adaptation, and commitment of our teams.

Once again this year, the finalist projects help us to look to the future. They are helping us build our decarbonization trajectory, by boosting performance of renewable energies, by developing new ways of producing green gases, by optimizing the decentralized energy systems we deploy and improving our energy efficiency solutions. This is essential to achieve our Net Zero Carbon objectives.

51
**FINALIST
PROJECTS**

140
**FILES SELECTED
BY THE GROUP'S BUS**

560
**APPLICATIONS
FROM 35 COUNTRIES**

ENGIE CARES

ENGIE's purpose ("raison d'être") is to act to accelerate the transition towards a carbon-neutral economy, through reduced energy consumption and more environmentally-friendly solutions.

The purpose brings together the company, its employees, its clients and its shareholders, and reconciles economic performance with a positive impact on people and the planet.





CONNECTED HEALTH & SAFETY

“No life at risks”
enforced
thanks to Artificial
Intelligence

ENGIE MESCATA is accelerating its digital transformation by providing Lead Operators with smartphones equipped with a technology combining Artificial Intelligence and video to improve its Health and Safety performance.

508 MESCATA **COTE D'IVOIRE, SAUDI ARABIA**
Antoine AUGUSTIN / Mohit JOHARI / Steve WILKINSON / Dylan GUNATILAKE / Catherine MIGNOT / Alice KOUAME / Jalal ALWADAI



LorinBubble
Social distancing mobile
application

LorinBubble is a digital smartphone application that alerts the users when they are for more than 1 minute within the distance of 1.5 -2 m of another colleague that also has the application activated on his/her smartphone.

359 **BELGIUM**
Natee BUNNAG / Chiara FRANCESCHI



MECHANICAL ASSISTANCE



THE ANTI-ROTATION ARCH

Mechanical consignment for belt-pulley transmission

It is a frugal safety-oriented innovation, which avoids injuries during maintenance of the pulley-belt system. When maintaining air treatment installations, extractors or any equipment with pulleys, it is indeed important to really immobilize the belt transmission system before any intervention: even when the fan is out of service, it may continue to rotate through a suction or blowing effect in the ventilation duct.

The anti-rotation arch is a security system to ensure this immobilization. It is lockable by key and it enables to completely lock the pulley.

It has been developed in two sizes: the arch for large pulleys with spokes and the confinable joint clamp.

076 ENGIE SOLUTIONS / COFELY FRANCE

André SOLER / Virginie GUITTARD

IronMan-Tenance
An Ergoskeleton
and a helping hand
for Maintenance

The maintenance of hydropower plants requires the handling of heavy equipment over several weeks. The repetition of these tasks causes fatigue, back pain and musculoskeletal disorders of the upper limbs. After a detailed analysis of the postures adopted by the maintenance workers, the CNR team chose to use motorized mechanical assistance to carry out maintenance operations. Thanks to an ergoskeleton and a helping hand, the health and safety conditions of field workers have been improved, the operational performance of the teams have been optimized, and part of the team can even be redeployed to other activities. This equipment will be widely used within CNR and can be duplicated in other ENGIE’s entities and be adapted to other heavy material handling activities.

082 FRANCE RENEWABLE ENERGY

Gérald COSTE / Xavier BOURGOIN



GOOD PLACE FOR WORK

ENGIE Care

ENGIE Care is an evolving program that is intended to be completed and improved over time, to consider environmental, societal and economic changes that impact the Group and the planet, and to remain at the forefront of innovation in terms of social progress.

By 2023, the ENGIE Care program will enable every Group employee worldwide to benefit from the same social protection base regarding coverage for hospitalization, death, disability, and parenthood. In 2020, more than 113 Group entities improved death coverage (concerns more than 90% of employees) and now almost 100% employees benefit from hospitalization coverage. Built together with the entities, it offers a common setting to optimize the local policies, including a digital tool.

346 WORLDWIDE

Juliette CRINDAL / Brigitte BOCQUE /
Érinna MOUTACHY / Marie LEMAIRE



Influence search engines to attract more technician candidates!

Search Engine Optimization (SEO) in Recruitment reinforces on a continuous way the position of technician vacancies and our ENGIE brand on internet in the Belgian war for talent! Proven results with qualitative organic traffic, monthly more than 600 additional technician candidates and efficiency gains of 400 k/year.

243 BENELUX

Frédéric VERKAEREN / Ellen VERHAEGEN / Frédéric GUILMOT / Dimitri TAITSCH

▶ IMPACT FOR GOOD - PEOPLE

We connect more Peruvians from Iquitos to Pucallpa through the Microwave Dorsal Network

More than 700,000 residents of 14 towns from Iquitos to Pucallpa benefit from the Red Dorsal Microwave project, which allows us to improve mobile internet coverage in the most remote areas of our Amazon. Despite the adverse climatic and geographical conditions, hindering logistical transport of material and personnel, as well as the works at a height of 150 meters, the construction was without any accident, within the expected period, becoming a new technical feat in our country.



557 LATAM PERU
Guina AYORA / Valeria ALVAREZ / Edwin REYES / Yoly LAZO / Melisa CARBAJAL / Joao CONDEZO / Mario CARBAJAL - SSOMA



“Women in our neighborhood” Project: Empowerment and Resilience

According to the report “Women at the heart of the fight against the COVID-19 crisis” Panorama Brasil, released on March 2020 by UN Women, women will be the most impacted by COVID-19, needing public and private support.

While strengthening ENGIE’s position in favor of gender diversity, (attracting and retaining women for job vacancies diversity, reinforcing Fifty-Fifty ENGIE Group project, ENGIE & Me), the Project supports social initiatives that boost income generation actions led by women in over 100 municipalities in 14 states of Brazil, promoting entrepreneurship, free online training courses, information on support networks, awareness actions to combat domestic violence and support gestational health.

497 BRAZIL
Luciane PINHEIRO PEDRO / Eduardo VIEIRA / Caroline COSTA / Jane SANTOS
Daniela SCHMITZ / Marcos MOLINARI

RENEWABLES

Producing decarbonized and green energy more efficiently requires investments and ideas to better adapt to production conditions: in any weather conditions, everywhere, solutions are adapted to our customers' needs...





IMPACT FOR GOOD - PLANET



Blue Carbon Project

The Blue Carbon project aims to help rehabilitate areas of Abu Dhabi’s mangroves using drone technology, as mangroves are vital to help storing CO₂, more commonly known as “blue carbon”, term used for carbon captured by the world’s oceans and coastal ecosystems.

178 MESCATA UNITED ARAB EMIRATES
Florence FONTANI / Daxita RAJCOOMAR / Brigitte DIERCKX / Éléonore LAURET

Biodiversity Matrix Program

Development of methods and a data analysis tool for managing risks, impacts and opportunities for the conservation of targets species, strategic areas and priority ecosystem services of Brazilian biodiversity, applied to decision making and the sharing of responsibilities between agents in the electricity sector.

543 BRAZIL
Camila RODRIGUEZ / Clovis SILVA / Felipe COSTA /
Fernanda FERNANDES / Jocelim COSTA / Luis Guilherme MIRANDA





WINDFARMS



A smart wind farm control to increase renewable electricity production

An operating wind turbine extracts the energy from the wind, but leaves behind a wake that propagates downstream and reduces significantly the performance of turbines located on its trajectory. The principle of Wake UP! is simple: it consists in controlling the turbines in a coordinated way at the scale of the farm, rather than individually as it is currently the case. By decreasing the power production of upstream turbines, their wake effects are mitigated and downstream turbine power production is increased. A simple software update of the turbine control system is sufficient to set up this new farm control and optimize the farm performance!

The efficiency of the wind farms can be raised up to 1% onshore and 2% offshore thanks to this solution, leading to annual gains of several million euros.

219 FRANCE RENEWABLE ENERGY / ENGIE GREEN
Thomas DUC / Nicolas GIRARD / Julien MASSON /
Guillaume ERBS / Simon COURRET



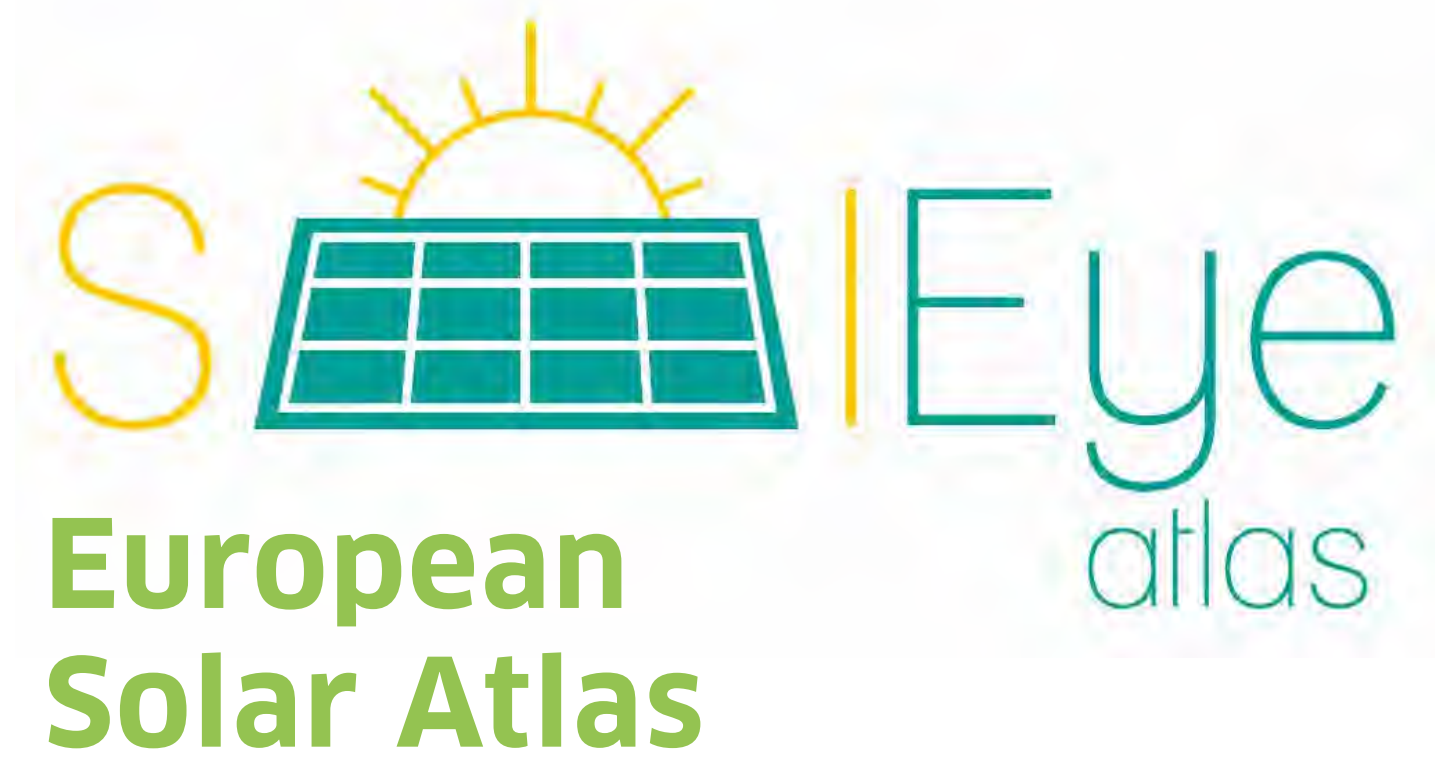
Bat Deterrent

Wind turbines can cause some bat fatalities. In order to preserve these species, the environmental authorities require developers to stop turbines when climatic conditions are conducive to mammalian activity. These curtailments lead to significant losses in energy production and economic losses of millions of euros per year. ENGIE Green and Laborelec tested NRG System technology for the first time in Europe, a scare tool based on the use of ultrasound, by looking for an alternative to curtailment. A ploy naturally used by bat preys to escape them. This innovative technology both contributes to the energy transition and biodiversity protection!

488 FRANCE RENEWABLE ENERGY / ENGIE GREEN
Sandra GUIBERT / Stéphane BRONCKERS



ENGINEERING FOR RENEWABLES



For the construction of a photovoltaic installation, the evaluation of the maximum energy yield is a key step to guarantee the economic profitability of a project. To meet this need, ENGIE Green designed SolEye: a new digital solution that can quickly recover solar resource data for all types of photovoltaic installation in Europe, by combining artificial intelligence algorithms with the processing of satellite images. With a click on a map, SolEye provides data of unparalleled accuracy, at almost zero cost thanks to the use of Open Data. Deployed within the Group, this atlas will enable all ENGIE entities to support the massive development of solar PV.

007 FRANCE RENEWABLE ENERGY / ENGIE GREEN
Émilien DUVERGER / Christian KOESSLER / Lina Maria RUIZ GOMEZ



TRiceR
The first cloud-based application that calculates the risk of ice fragments falling from a wind turbine.

Icefall risk studies need to be quickly available to manage risks during operational conditions. With TRiceR, users get results in less than one minute, can change the parameters at will, directly assess the impact of mitigation strategies on the risk maps and produce their own reports. Compared to previous methodologies, it allows a much more detailed mapping of the risk zones, making it a real risk-based decision tool for windfarm developers and operators.

371 TRACTEBEL BELGIUM
Xavier VANWIJCK / Pascal GEERINCK / Ottelien BOSSUYT / Jean-Paul MOSSOUX / Tom GHENNE / Johan COBBAERT / Marc VAN DAMME



TracToZero

TracToZero relies on a multimodal approach to identify the optimum mode of transport to promote the reduction of GHGs, societal (travel time) and financial gains. By comparing mobility demand data and the socio-economic data of a territory or a company with the results of optimization of a fleet's energy, TracToZero can be used to size the demand for each type of energy. This analysis can be done at macro or micro level. The TracToZero approach can be applied to any type of vehicle, such as buses, lorries and logistics vehicles, service and fleet vehicles, the passenger vehicles in a territory, forklifts and vehicles in industrial or airport environments as well as for boats, trains and aircraft.

473 TRACTEBEL BELGIUM
Gauthier BLIECK / Laurent DE VROEY / Vincent MEUNIER / Sylvain LOUMEAUD





SOLAR PLANTS

Benefit from PPA as a BtoB customer, regardless of your size

Our customers can have access, simply, via a single interlocutor who “hides” the complexity from them, to an offer of Green PPAs based on our renewable production assets.

The unique contractual and “energy” engineering that we developed combines the various know-how of the ENGIE Group. It allows ENGIE Solutions, and SOVEN, its energy purchasing center, to offer a PPA solution to customers who could not benefit from it due to their size by pooling the needs of several customers to make commitments and join forces with energy producers (ENGIE Green and SHEM).

It goes further and offers a turnkey and tailor-made PPA, combining the expertise of the energy supplier E&C and energy management by GEM.

Thus, this solution, which is integrated into Energy Performance Contracts, district heating or cooling networks or solutions for the production of H₂ by electrolysis is differentiating for ENGIE Solutions, and creates value across the Group.

And it’s a commercial success!

036 ENGIE SOLUTIONS / COFELY **FRANCE**
Karine LE BOURG / Thomas LASSERRE / Lorène LANAU /
Marion CHOTARD / Philippe ROCCHI / Caroline LAMBINON



CleanRight Be Ready for a Sunny Day!

Inefficient cleaning wastes money and water, by making use of a smart combination of sensors and advanced algorithms a utility scale power plant can save up to 200,000 USD per year.

050 TRACTEBEL / BE TRIS /
LABORELEC **BELGIUM**

Thore MÜLLER / Osvaldo BLAS / Jaime FELL /
Ronald MARON / Pablo MONTES

The VPPx Project by Simply Energy

Simply Energy’s VPPx Project is a world leading residential battery-based virtual power plant (VPP) trial. This project enrolled 1,350 participants to offer the flexibility of a 6.4MW VPP to the grid and includes an innovative new decentralised energy marketplace that generates more value for customers.



206 ASIA-PACIFIC **AUSTRALIA**
Ryan WAVISH / Campbell HUTCHISON / Ben WILSON /
Becky MONROE / Stephen WEBB / Asa! AHMADLOU /
Jennifer ZULL / John COGGAN / Renee TIPENE /
Ryan ROGERS / Michael REITER / Frank YU / Alok RAJPAL



ENERGY SOLUTIONS

ENGIE supports cities, industries and corporates in their Net Zero journey thanks to a global approach: decarbonization roadmap definition to build ambitious and realistic targets; energy efficiency actions to reduce consumptions; distributed & decarbonated infrastructures development to green the residual energy mix.

SOLAR ROOFS

Solar AI

AI-powered instant assessment for rooftop solar sales

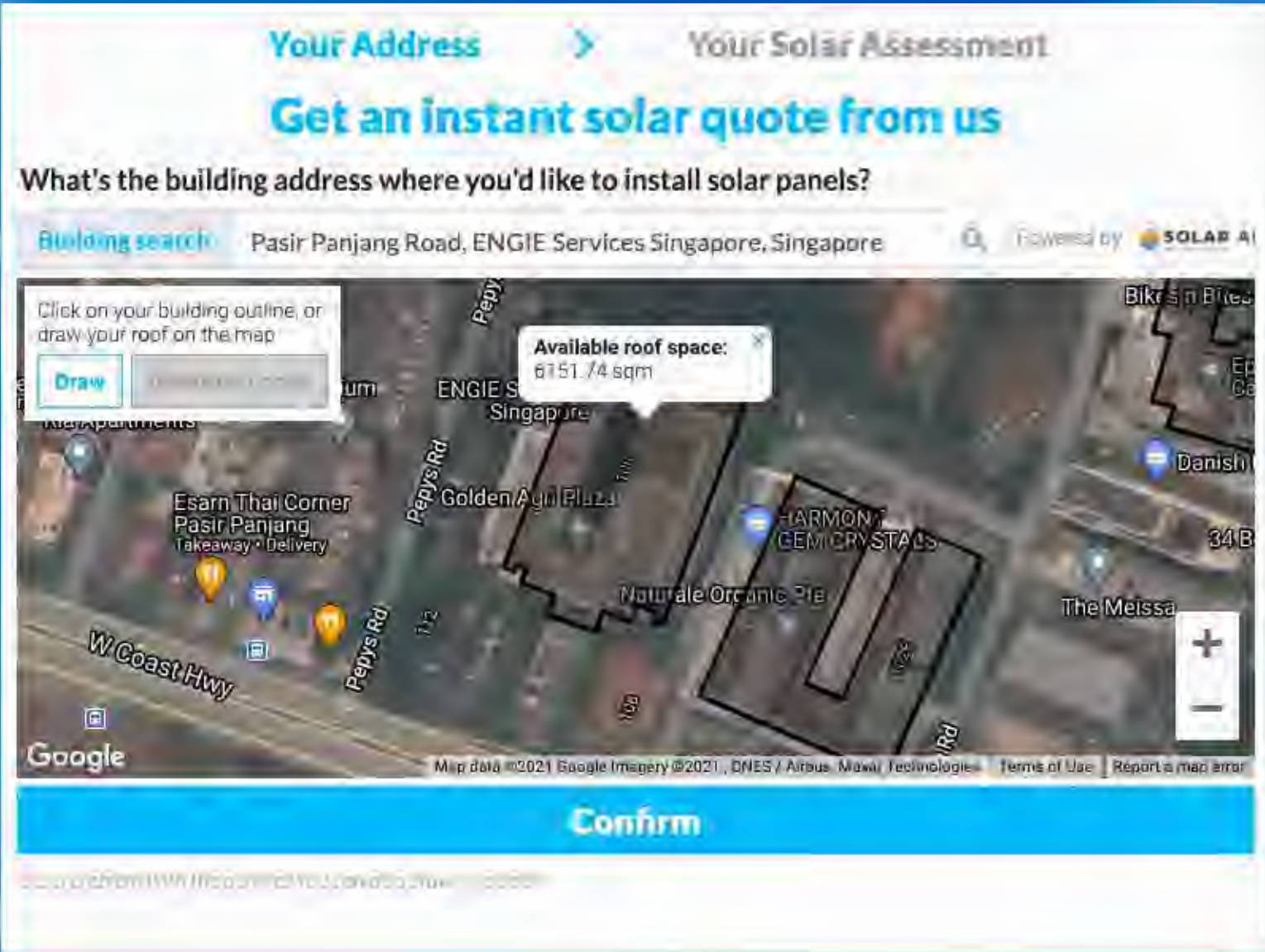
Despite governments’ continuous push for green energy and tariff competitiveness, rooftop solar penetration in Southeast Asia remains under 1.5%.

In 2020, the COVID disruption worsens the existing problems by making it even harder reach customers. ENGIE SEA focused on digital channels to drive solar sales and marketing in the region.

Combining artificial intelligence from satellite images and other geospatial data to streamline and boost rooftop solar sales cycle – Solar AI and ENGIE Factory teamed up with ENGIE South East Asia (ENGIE SEA) to develop a scalable and innovative digital lead generation tool hosted on ENGIE SEA’s showcase website. A targeted digital marketing campaign is implemented to drive awareness and traffic to the website.

With 10,000 clicks and 900,000 impressions, more than 3.9GW of solar potential identified across 20,000 buildings, customer acquisition cost is reduced by 90% and a €1-2M investment value is expected to be generated from the 6-week pilot.

417 ASIA-PACIFIC SINGAPORE
Bolong CHEW / Bert DEPREST / Rayne LI / Eddy LEE





CARBON NEUTRAL BUILDINGS

Reduses CirculAir

Cost effective renovation of heat generation in high rise apartment buildings, leading to 40% gas reduction

Circulair helps transitioning older buildings into sustainable energy, by using a new type of heat pump which can be placed on top of an existing building and which reuses ventilation air as a heat source. This is a pragmatic and low cost solution, with limited hassles for the residents and owners. Market is huge and so is the impact on our planet.



TablePointer:
Intelligent Energy-Efficiency-as-a-Service for Decentralised Facilities

Food & Beverage (F&B) is one of the most energy-intensive commercial sectors.

While the energy consumption of a single outlet is very small compared to a building, the aggregated consumption is significant. TablePointer’s Intelligent Energy Manager has Internet-of-Things sensors and controls that transform existing passive and disparate equipment, such as air-cons, kitchen exhausts, fridges, into smart machines.

We offer a pay-as-we-save monthly plan, with zero costs upfront, and where customers are not bound to long and onerous contracts. For each individual equipment we help with, we baseline and measure the savings, and customers share 50% of the savings with us. Our IoT-based solution gives us proactive influence of the energy savings, and this effectively works like a utility subscription.



CARBON NEUTRAL BUILDINGS



ENGIE Zero is a whole house retrofit solution that guarantees reduced carbon emissions and energy bills through transforming dwellings into warmer, healthier, more comfortable homes.

Based on EnergieSprong approach, the new ENGIE Zero offer has been designed as a one-stop shop to decentralise, digitalise and decarbonise homes, through the introduction of energy efficiency solutions.

Customers in local authorities, housing associations and registered providers can implement whole house retrofit solutions, which include the installation of solar PV and battery storage systems, fabric improvements to roof, walls and flooring, a low carbon heating and hot water solution, mechanical ventilation and long-term maintenance and monitoring. Furthermore, the offer is being extended to include a number of smart technologies such as the implementation of rapid EV charge points and grid balancing technologies as part of the deal.

ENGIE is the only main contractor offering this tried-and-tested, end-to-end solution in-house, transforming existing inefficient homes to net zero carbon.

380 UNITED KINGDOM

BENJAMIN HOW / ANDY MERRIN / JAMES COOK / STUART MOORE



INTERNAL AIR QUALITY

“HEALTHY BUILDING” OFFER

A solution to guarantee Indoor Air Quality in closed spaces such as schools or offices.

Based on its air treatment expertise widely used in hospitals, swimming pools and data centers, ENGIE Solutions has developed a 3-axis approach called STM (Simulate, Treat, Measure) to enable confined spaces such as schools, offices, nursing homes to stay healthy despite of risks such as SARS-COV-2.

To support deployment, the group’s Air Quality Lab, ENGIE Lab Cylergie, benchmarked and qualified the appropriate technical solutions and defined the sizing and operating rules.

The “Healthy Building” offer is available with ENGIE Solutions’ teams.

496 ENGIE SOLUTIONS **FRANCE**

Olivier GRESLE / Patrick MULLIER / Sylvain LAPOUGE /
Martial ARCHENAUULT / Maxence BUREAU

SARS-COV-2 in the air

Measuring ATP the first indicator of potential contamination

Our technology makes it possible to identify microorganisms (viruses and bacteria) in air samples taken in 10 minutes and thus quickly determine whether a place is likely to be contaminated by SARS-COV-2, among others.

433 ENGIE SOLUTIONS **FRANCE**

Priscilla PETINGA / Nathalie ROUSSEL / Marie-Ève GSTALDER /
Manon COTTET-PROVIDENCE / Raphaël GENIN





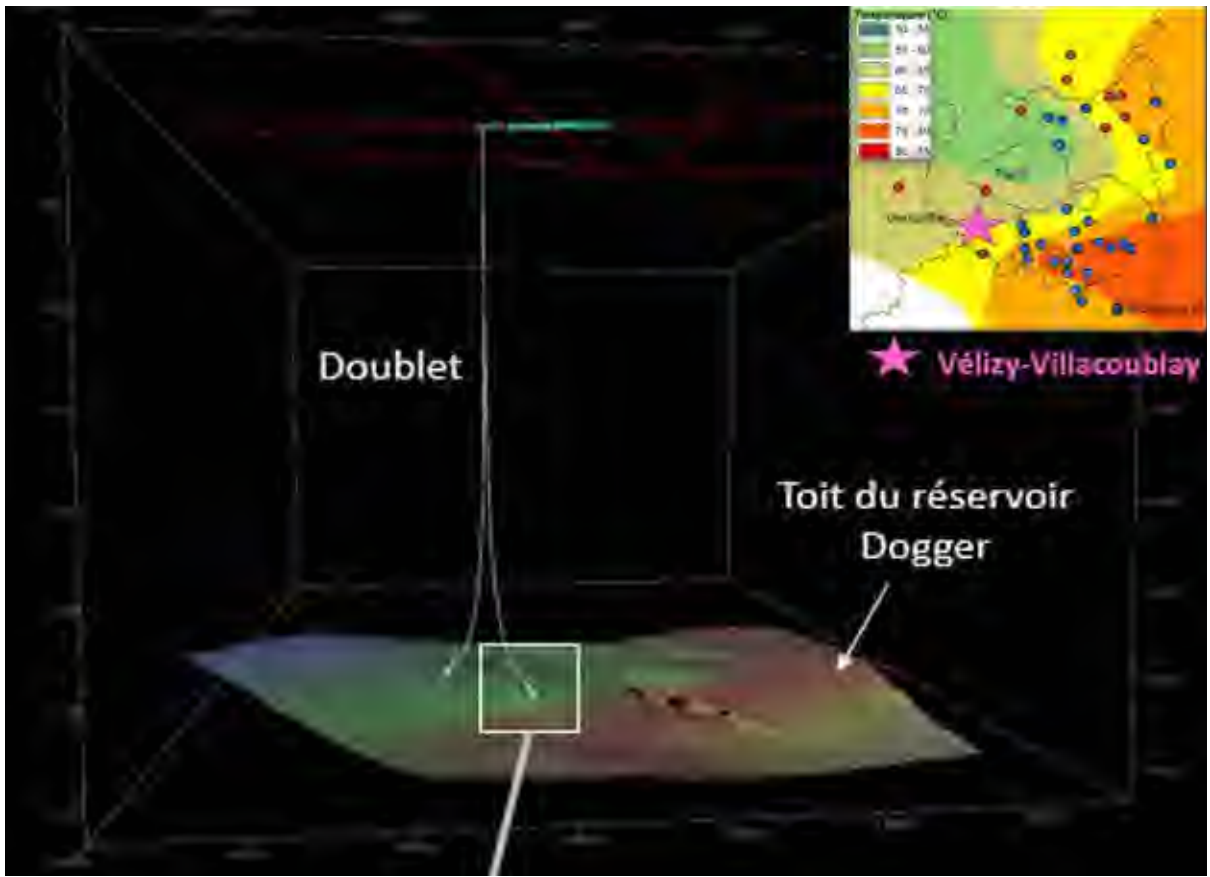
ZERO CARBON DISTRICT HEATING

Alternative subscription
“Zero Carbon”
Heating network

This innovation was imagined within the framework of a heating network project where the Collectivity expressed a strong ecological ambition of carbon neutrality. This unique formula makes it possible to offer each subscriber, each year, a specific subscription making it possible to substitute, in the heat network mix, conventional natural gas by locally sourced agricultural biomethane.

The idea developed thus makes it possible to offer each of the subscribers of a district heating network the possibility of becoming an individual consum’actor, while fully controlling their carbon footprint.

305 ENGIE SOLUTIONS FRANCE
Lise DAMIEN



MULTIDRAIN DRILLING

An innovative design
for the development
of deep geothermal energy

The multidrain drilling technique makes it possible to multiply by 5 the crossings in the geothermal reservoir compared to conventional drilling, due to the specific U-shaped geometry of the drains used. Implemented this year for the first time in France at Vélizy-Villacoublay (Île-de-France), it is a catalyst for the development of deep geothermal energy at the national level. This technique makes it possible to achieve the economic equilibrium of projects in historically unpromising territories. It’s a game changer for ENGIE.

183 ENGIE SOLUTIONS FRANCE
Thomas GUEANT / Nicolas MONNEYRON / Antoine COICADAN /
Aurélien MIMOSO / Dimitri AYMARD



DHC OPTIMIZATION



ICEFLAKE

Computer-aided district energy plant site selection and network planning

In greenfield district energy (heating/cooling) system conceptual design, iceflake can generate thousands of designs to optimize the district cooling site location and network layout based on different quantitative criteria, integrating multiple financial and engineering criteria to find a better design, respond to changing design conditions, and get better performance (engineering, financial).

044 ASIA-PACIFIC CHINA
Eleanor HO / Leah NIE / Zheng YANG / Lingqi SU

NEMO x TABREED

Dubai Downtown cooling network optimization

Dubai Downtown launched a call for tender for a stake in its world’s largest district cooling and its operation for 25 years. This network is located next to existing networks operated by TABREED, thus potential synergies were considered.

With ENGIE’s NEMO (NETwork Modeling and Optimization), given the short timeframe of tender offers, we were able to anticipate the operation of the network for the whole concession duration, develop a competitive and attractive offer, and forecast savings on operational costs.

Once the acquisition was concluded, further studies were carried out to finalize the business plan in particular regarding the investment linked to the interconnection of both existing networks.

The next deployment step is to use NEMO as a decision-making assistant for the daily operation of the network.

137 CORPORATE / ENGIE DIGITAL FRANCE, UNITED ARAB EMIRATES
Igor ROCCA / Ines Cléo DASSONVILLE / Lucas CEZARD / Benoît CÔME / Thibault GENTIL / Antonio DI CECCA / Julien BORREDON / Katharina DEFUNG



First multi-BU master plan to solve the complex problem of decarbonising large DHCs

We present an innovative combination of expertises and tools, involving multiple actors from ENGIE (Storengy, ENGIE Lab Crigen, Tractebel, ENGIE Impact) and outside, to solve the complex problem of decarbonising large district heating and cooling grids for the city of Helsinki.

170 STORENGY FRANCE
Philippe AUBRY / Valentin GAVAN / Jean-Baptiste DEBONNAIRE / Sandrine BOSSO / Romain DONAT / Mei HAN / Patrick EGERMANN / Pierre GARSOUX

NETWORKS AND GREEN GAS

Gas remains key for energy transition. ENGIE is developing greener solutions with gas from mobility to production and distribution, and biomethane upgrading.



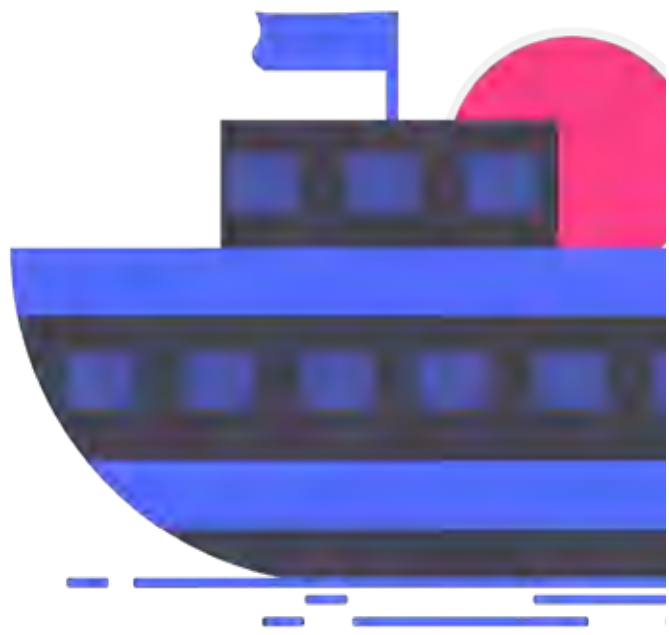
GREENING GAS

Start trip with
LN Gauge

Update parameters on the side and start trip to launch simulation algorithm.

Start Trip

Cancel



Digital solution
for green mobility

The combustion of heavy fuel oils used by ships results in emissions of CO₂, sulphur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter. Maritime transport represented just under 3% of global CO₂ emissions in 2018, the equivalent of Germany’s annual emissions.

The International Maritime Organization has decided to react and has set ambitious targets to curb greenhouse gas emissions.

With fewer than 400 ships powered by LNG in service or on order, this can still be considered to be a niche market, but studies predict an annual potential for LNG-fuelled ships of 35 million tons by 2035, in other words a market share of approximately 10%.

The LN Gauge software application provides crucial data to optimize engines performances on bioLNG and LNG-fueled ships.

GAYA

GAYA is an innovative process which converts various local solid residues such as biomass and non recyclable waste from territories into a renewable substitute of natural gas.

GAYA project aims to produce a renewable synthetic methane which respects 100% of the injection specifications for the gas network or for direct use as a mobility recycled carbon fuel, by converting various biomasses and waste through pyrogasification: it is an integrated technological process chain, currently being industrialized by ENGIE, that has been patented, developed and optimized by ENGIE Lab CRIGEN.

521 CORPORATE / ENGIE Lab CRIGEN FRANCE
Marion MAHEUT / Olivier GRAUWIN / Etienne VOGT / Delphine CHEREL-SPARHAM /
Adeline DUTERQUE / Alessandra BARBA / Yilmaz KARA / Maxime HERVY /
Jonathan MAISTRELLO / Étienne BASSET / Guillaume PEUREUX / Maxence GAILLARD /
Thomas PIERRE / Gabriel TEIXEIRA / Virginie TESSON / Benoît BRIENT / Didier LIAUTAUD



▶ BIOGAS UPGRADING

Picachaux

Low cost biogas decarbonization with limewater creating additional revenues



Picachaux is a ENGIE Lab CRIGEN patented and under development technology to support biomethane development by offering a low-cost (-15%) biogas decarbonizing solution that captures and transforms CO₂ into CaCO₃ valuable product that can be used locally (circular economy), enabling the operator to increase its revenue.

The demonstration will take place on an anaerobic digestion unit in Belgium in 2021 and the technology will then be commercialized in 2022. Picachaux is the solution for the small-scale market segment in France, Europe, APAC, MESCATA, for biogas at home or small BioNGV refueling station.

The technology is associated to European and French collaborative Research projects.

257 CORPORATE / ENGIE Lab CRIGEN FRANCE

Marine JUGE / Yilmaz KARA / Jonathan MAISTRELLO / Alessandra BARBA

▶ GREEN GAS IN NETWORKS

Biomethane Network Pressure Reduction Unit



Pooled networks* of renewable gas require a functional interface between these new structures and the consumption areas. This interface ensures the priority of biomethane injection and increases the quantity of renewable gas in the energy mix.

The Biomethane Network Pressure Reduction Unit (“PDRB” in French) complies with the new technical and regulatory requirements for the distribution of a renewable gas, providing a constant flow rate and pressure despite the fluctuations in biomethane production.

It can therefore:

- maintain a flow rate and pressure to suit the upstream production;
- precisely regulate a downstream pressure compatible with the consumption area;
- meter the renewable gas distributed;
- ensure the safety of the entire structure.

355 GRDF FRANCE

Sébastien JOUSSET / Philippe JULLIEN / Jean-Michel LUCAS / Stéphane DE MICHELE / Thomas PAULUS

*pooled networks = networks dedicated to the transportation of biomethane from one or more production points to the consumption sites.



DIGITALIZATION



ePortalDGSR

Distrigaz Sud Rețele is the first Romanian distribution operator that fully digitized the process of connection to the natural gas distribution network, by implementing a Portal.

ePortalDGSR was a success from the beginning: we continue adding functionality and now 100% of our customers (commercial, residential, partners, economic agents, etc.) can and do use it.

Designed with a true customer-centric approach, the portal provides an end-to-end service for processing customer requests and gas installer interventions.

The project was launched in 2018 and has already been adopted by two thirds of the applicants, with a high level of satisfaction.

Since 2020, it has proven to be particularly useful for our customers and employees, given the pandemic situation.

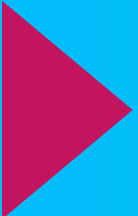


334 NECST **ROMANIA**
Liliana GAVA / Mihaela MARINESCU / Irina CIUBUC /
Isabela MAGUREANU / Corina NASTAC / IT Team

HYDROGEN

ENGIE is developing its position in renewable gases also by innovating on the production and value chains of green hydrogen, exploring emerging and potential markets.





H₂ GAS PRODUCTION

P.Hy.G

Plasmalysis for Hydrogen from piG manure (Storengy X Graceforce)

Co-production of green H₂ and biogas by valorizing liquid manure on the Engie BIOZ sites using plamalysis technology.

112 STORENGY FRANCE
Emmanuel KERMARREC / Clotaire LEFORT / Flavien BEAUDOUIN / Thomas GRUNDLER / Rostand NGAMENI / Laurent BARATON / Vincent PICHON



HyPSTER

Hydrogen Pilot Storage for large Ecosystem Replication

HyPSTER is a territorial ecosystem project that aims to use salt cavern storage to connect hydrogen production by electrolysis to industrial and mobility uses. HyPSTER project offers a disruptive solution of Green H₂ storage at scale thanks to his know-how in gas storage.



009 STORENGY FRANCE
Germain HURTADO / Grégoire HEVIN / Anil KALYANPUR



H₂ GAS VALUE CHAIN



Hydrogen on site solutions from Lab to Fab to Business

ENGIE Lab CRIGEN and ENGIE New Ventures detected, invested and launched the start-up H₂SITE which solves the issue of hydrogen distribution with an equipment able to produce onsite competitive hydrogen from any molecule (biomethane, biogas, ammonia, methanol, etc.) for ENGIE’s businesses such as mobility, industry and territories.

224 FRANCE

Vincent RUINET / Secil TORUN / Camel MAKHLOUFI / Jean-Baptiste FURIA / Gilles HAON / Rostand NGAMENI / Guillaume ROMBAUT / Andy DAVEY / Michael WUENNEMAN / Jiří NETUŠIL / Andres GALNARES



A green hydrogen value chain with largest to date electrolyser

Facilitate a complete 1,85 Gigawatt renewable hydrogen-value chain serving industry and heavy duty mobility, through large-scale renewable hydrogen production by first deploying a 100MW electrolyser in the first phase at the Eems Power Plant located near Groningen in the Northern Netherlands, enabling a transition from a fossil based site to a renewable site.

232 GENERATION EUROPE THE NETHERLANDS

Afkenel SCHIPSTRA / Grégory BARTHOLOMÉ / John BOLT / Rose DE LANNOY / Hayley FABER



H₂ GAS OFFERS

HyPort, the first green hydrogen station at an airport

Occitania region has set very ambitious objectives in terms of energy transition and aims to become the first European region with positive energy by taking advantage of its significant renewable potential. Renewable hydrogen for mobility is one of the key elements of this strategy.

In this context, the ENGIE group (made up of Engie Solutions, Tractebel and GNVERT) and the Occitan Regional Energy and Climate Agency (AREC) have decided to combine their skills to develop a green hydrogen ecosystem on the territory. Engie Solutions and AREC have created the project company “HyPort SAS” whose mission is to invest, build and operate renewable hydrogen refueling infrastructures throughout the Territory for the use of mobility, industry and/or logistics, starting with the deployment of a renewable hydrogen production and distribution station at Toulouse-Blagnac airport, supplying mobility uses in public and tarmac areas as well as industrial uses in the Occitania Region.

430 TRACTEBEL FRANCE
Maxime VIGOT / Caroline DAUTEUILLE /
Jean FROUIN / Victor BOISSINOT /
Thibault SAUGE / Jean-Charles VILLA



THERMAL... OPERATIONAL EXCELLENCE AND DECARBONIZATION

Our teams continuously strive for operational excellence in our thermal power plants through a variety of new collaboration opportunities. We are also exploring innovative solutions to decarbonize our assets to keep providing the flexibility and the energy security the power system requires in order to integrate an ever growing share of renewables.



DECARBONIZATION

Colombus

A scalable & replicable solution to decarbonize the industry all over the world

The combination of captured “fatal” CO₂ from lime production with green hydrogen from renewable energy, to produce carbon-neutral synthetic methane of gas-grid quality, that will be a sustainable alternative for natural gas used in the industry or for transport purposes. The project will demonstrate at industrial scale a worldwide first-of-a-kind integrated process using CO₂ to directly create methane. It requires the individual upscaling of multiple technologies, such as a new type of lime kiln, one of the world’s largest electrolyzers and two different types of methane reactors.

The produced e-methane will be of high-quality, suitable for direct injection into the national gas grid.

Next to the upscaling, the main innovative idea is to put all installations – including the lime production plant – on one site, thereby reducing infrastructure costs for the project and limiting the impact on society of these new technologies.

574-20 GENERATION EUROPE **BELGIUM**
Daniel MARENNE / Seth SPOELDERS / Olivier ARTHAUD / Elke VAN DEN BROUCKE

DKarb6

How to decarbonise the steel industry whilst creating a million euros business

Use of the technically mature HTC technology to transform biowaste in biocoal, to replace fossil coal at a steel plant from which by-products are transformed into green electricity.

420 GENERATION EUROPE **FRANCE**
Miguel MATEUS / Sébastien DUBOIS (LBE) / Fabien ROUSSEL /
Éric ROBIAL (GEM) / Daniel MARENNE / David BUYASSE /
Jim GRIPEKOVEN (LBE)

KerolHyme

Synthesise jet fuel at industrial scale through green, renewable and nuclear-sourced, hydrogen and CO₂ issued from lime industry processes.

199 TRACTEBEL **BELGIUM**
Célestin PIETTE / Daniel MARENNE / Éric GOSSEYE / Anicet TOURÉ





OPERATIONAL EXCELLENCE



Innovative CO₂ based Antiscaling Treatment

Successful deployment of an innovative, cost effective and safer antiscaling treatment with CO₂ and flue gases for cooling water circuits as an alternative for traditional acid treatments to avoid the precipitation of calcium carbonate. In 2019, Laborelec with the BU Gen Research Program studied the feasibility of using directly the flue gases originating from gas-fired power plant. The successful full-scale trial led to industrial deployments in two ENGIE power plants in Belgium.

470 TRACTEBEL/LABORELEC **BELGIUM**
Christophe VANSCHepDAEL / Nele DEWILDE / Marie-Laure THIELENS / Frans VAN DIJEN



The KNIP project

A compact & mobile control rod cutting tool to reduce nuclear waste

KNIP is the “brainchild” of a combined team of young engineers of Doel nuclear power plant and ENGIE Solutions, who – in preparation of the decommissioning of the nuclear power plants – co-designed and built a marketable, compact & mobile cutting tool for control rods (used in nuclear reactors to control the fission rate of uranium), which separates (cuts) the pins of the rod from its “head”, thereby drastically reducing the volume of nuclear waste that will have to be stored.

221 NUCLEAR **BELGIUM**
Jos VANDEMAELE / Jan VAN CAER / Bart THYS / Ludo SMEERS / Peter PELEMAN

▶ OPERATIONAL EXCELLENCE



Bladeboosters

A new method to repair steam turbine blades

When steam turbines are inspected during maintenance activities, they might show signs of impact damages on critical components such as turbine blades. The manufacturer of the turbine only proposes as a solution to replace all blades at high price, which causes a long unavailability of the plant. Our innovation is to repair only the damaged blades by combined efforts of highly skilled experts from different fields such as non destructive testing, welders, heat treatment and aerodynamism. The solution allows important savings without any impact on the initial schedule of activities. Furthermore, it improves the efficiency of the turbine and thus saves CO₂ emissions. The Heron power plant saved 430 keur and avoided 10 weeks of unavailability (3 Meur revenues) in 2020.

172 GENERATION EUROPE **BELGIUM**

Jean-Louis FARVACQUE/ Bert BROUNS / Yves GROFILS / Ioannis LAMPRAKIS



Turbo Coat

A successful creative solution for damaged steam turbines

Turbo Coat is a created technique as an in-house developed alternative concept for the repair of strongly eroded exhaust steam turbine casings (diffuser).

039 GENERATION EUROPE **BELGIUM**

Tomas VAN ACKER / Nick LEMMENS / Tom POTTIER / Alain GUELTON

ENERGY SUPPLY

The health crisis has accelerated the digitalization of the relationship with our customers: teleportation to our customers' home ... yes, yes... we know how to do it, but also many other things to make their lives easier!





AI FOR SALES



Reachable, from any object,
without revealing my contact details!

SPOORS allows you to be contacted without revealing your contact details! Our stickers include a unique QR code that allows the person who scans it with his smartphone to contact you without ever seeing your contact details. It's up to you to create the use according to the place where you stick your SPOORS: wireless doorbell on a mailbox to avoid missing deliveries or to be contacted by your neighbours in case of problem ; on a key ring to facilitate the restitution in case of loss; facility management to contact directly the syndic, the elevator operator or the plumbing emergency, etc.



spoors.fr

075 FRANCE BTOC

Alexandre DUBY & Startup studio Wefound / Gilles DEBUCHY / Sylvain HUET / Sophie VERGNAUD / William LECLERC



Speech Analytics & quality
management automation
of our customer calls

10 million of calls are handled yearly by our call centers but not even 0,1% are monitored to verify they meet our quality expectations. A project was launched to test the reliability of a speech analytics tool based on artificial intelligence. The goal? Automating the quality control and greatly increase the sample analysed. The compliance score of 5 quality criteria, such as the customer greeting, was successfully automated reaching a 85% reliability rate. The speech analysis enabled us to detect concrete levers to optimize operational performance (e.g. avoiding putting the customer on hold with no good reason), allowing to fuel concrete training plans, improving the customer experience while achieving cost-savings. The more coached the advisors are, the more satisfied the customers are!

406 FRANCE BTOC

Nathalie CHABERT / Laurent COURDY / Thibaud SCHONTZ / Christelle CORNILLON / Christophe TAUZIN-PETIT / Carlos LIMA



CUSTOMER PORTALS

TELEPORTATION
TO CUSTOMER HOMES
Remote sales via video calls

Due to the current Covid-19 crisis and the difficulties to move, we introduced video calls as a new tool for quotations, installations, and technician rounds optimization. Moreover, we offer a new customer relation channel: digital helps staying close to the client.

328 FRANCE BTOC / ENGIE HOME SERVICES

Nathalie RANTIÈRE / Pierre BOYRIE /
François-Xavier LEBLANC / Philippe ESPOSITO /
Sophie DEHAIS



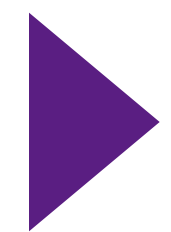
Insta-subscription:
one snapshot and one minute
to get your energy contract

happ-e by ENGIE is our energy retailer brand, main-targeted on millennials. For them we have made it simple & smooth to subscribe a new energy contract: take a picture of your meter with your smartphone, fill in a little info in one minute no more! You're done!

486 FRANCE BTOC

Michel LE-GARS / Frédéric TAMAYA / Carl PIGEOT
Nadim JABRE / Erawan PANYA / Benoît RICAUD





ACT WITH ENGIE



“Mon Programme Pour Agir” is a program like no other, rewarding customers who consume less and better, unlike loyalty program that reward consumption. It is also the first time that such a program is launched massively for millions of households.

Free and reachable in “My account” in the website or the mobile application, it enables our customers to act in a virtuous way and get points, the KiloActs (a virtual money created for

the program). Then, they can burn their points, in a virtuous circle, to support a project in favor of sustainable development /solidarity or get an eco-responsible object.

By offering our customers to act with us for a better world, this program highlights the environmental commitments of ENGIE, create brand preference to increase loyalty and is an element of differentiation to get new customers.

511 FRANCE BTOC

Aur lie RIBAUT / Chlo  LAMILHAU / Maureen BOUMIER / Jonathan HO HIO HEN / Nicole BELLANGER / Sandrine MORVAN / Marwan DIRIDOLLOU / Yann RAMSAMY / Iris BRUY RE / Raphael HOAREAU



Let's co-create a sustainable world with our clients!

The first worldwide innovation challenge where both employees and clients collaborate to build concrete decarbonization solutions that meet both clients' and ENGIE's business needs.

020 GEM BELGIUM, FRANCE, USA, THE NETHERLANDS, SWITZERLAND

Alice RICHARD / Razvan DORDEA



CUSTOMER FINANCE



Cash Back for Customer Groups

A new way to deliver access to energy

185 ENGIE ENERGY ACCESS **ZAMBIA**
Donal CONNOLLY / Natalia BATISTA /
Maritina HAMAKUMBA

ENGIE is advancing a new frontier of energy access by harnessing the collaborative power of community savings groups to bring affordable solar solutions to those left behind by the current consumer-finance model, mostly rural women. By engaging with customers through the existing social infrastructure of their local savings groups, we can help to de-risk the repayment of our solar home

system loans while also directly empowering these valuable community level institutions to bring renewable energy and financial services to a broader and more diverse range of individuals. The group reward mechanism helps group members achieve a significantly higher loan completion rate. A win-win-win situation for our customers, the planet and for ENGIE.



CUSTOMER FINANCE PROGRAM

An innovative way in retaining and/or acquiring B2B customers
The Customer Finance Program (CFP) enables the client to get extended payment terms up to 180 days, at a lower cost than its WACC. ENGIE improves its competitiveness and neutralizes its credit risk exposure.

327 BENELUX **BELGIUM**
Maarten DEBAENE / Bruno CORTIER / Stéphane PETIT /
Helga VOORSPOELS / David BERTRAND

CHANGE WITH THE WORLD

Adaptation to a changing world as never been so true in 2020. At ENGIE we have accelerated our adoption of digital practices with home working, but we are looking forward to emerging practices in trading, financing of energy transition, AI assisted maintenance, connecting to our employees, stakeholders and customers.



TRENDS IN TRADING



Why Gas Origin matters?

A disruptive blockchain solution bringing transparency to natural gas markets and incentivizing the reduction of GHG emissions associated to production and transport.

002 GEM **ITALY, BELGIUM, FRANCE, USA, UNITED KINGDOM, SWITZERLAND, SINGAPORE**
Nicolas LERICHE / Thierry MATHIEU / Aubry SPRINGUEL /
Aur lie BOSCAROLO / Edouard CHEVALIER



RESCO

Algorithm for Daily Tendering of Capacity Contracts in Western Europe

RESCO is a service that enables the costing of thousands of reserves contracts for grid support from thermal, hydro and demand-side management assets (DSM) in an automated way.

014 GEM **BELGIUM, FRANCE, GERMANY, THE NETHERLANDS**
Assma HABBACHICH / Axel OLISCHL GER



▶ **ADVANCED FINANCE**

FREE- Finance Robotics ENGIE Evolution

Is the project that has made it possible to replace manual processing by automatic executions by simulating human activities carried out by robots. This has allowed to process high volumes of repetitive tasks, eliminating manual errors, adding activities that, due to lack of time, could not be executed, and to improve the Customer experience.

282 LATAM **MEXICO**
Jaqueline HERRERA ROBLEDO / Mary TANIA / YAÑEZ VALENCIA /
Norma Angelica SANTILLAN PEREZ / Miriam MEJIA ROMERO /
Alberto SANCHEZ OLIVERA / María Teresa DE JESUS GARCIA



Pilot financing for a greener future

A first of a kind US\$125 million financing for the construction of the 151MW Calama wind farm. This renewable generation will replace coal generation avoided by anticipating the closure of coal units.

396 LATAM **CHILE**
Bernardita INFANTE / José Miguel HIGUERAS /
Francisca VÁSQUEZ / Eduardo MILLIGAN / Matías BERNALES /
Pedro PORTELA / Fabián GONZÁLEZ



AI ON THE FIELD

MIRORS

(Mixed Reality for Operations with Simulations)

Energy transition requires to improve and maintain performance of increasingly complex assets. Industrial players must access – on the field – to more sophisticated information to monitor their equipment: a combination of multi-physics simulations, data-science and hybrid immersive / collaborative User Experiences (UX).

Based on Mixed Reality and 3D Multi-physics Simulation, MIRORS is a diagnosis travel kit which brings inaccessible information from assets to the eyes of operators. Thanks to a dedicated hardware (Microsoft HoloLens and a processing unit) and a tailored-made software that combine 3D CFD & mixed reality, it delivers a brand-new way to support businesses from concept to operation phases. MIRORS builds trust and ability to act faster, leading to reduce time to market and increase operational performance.

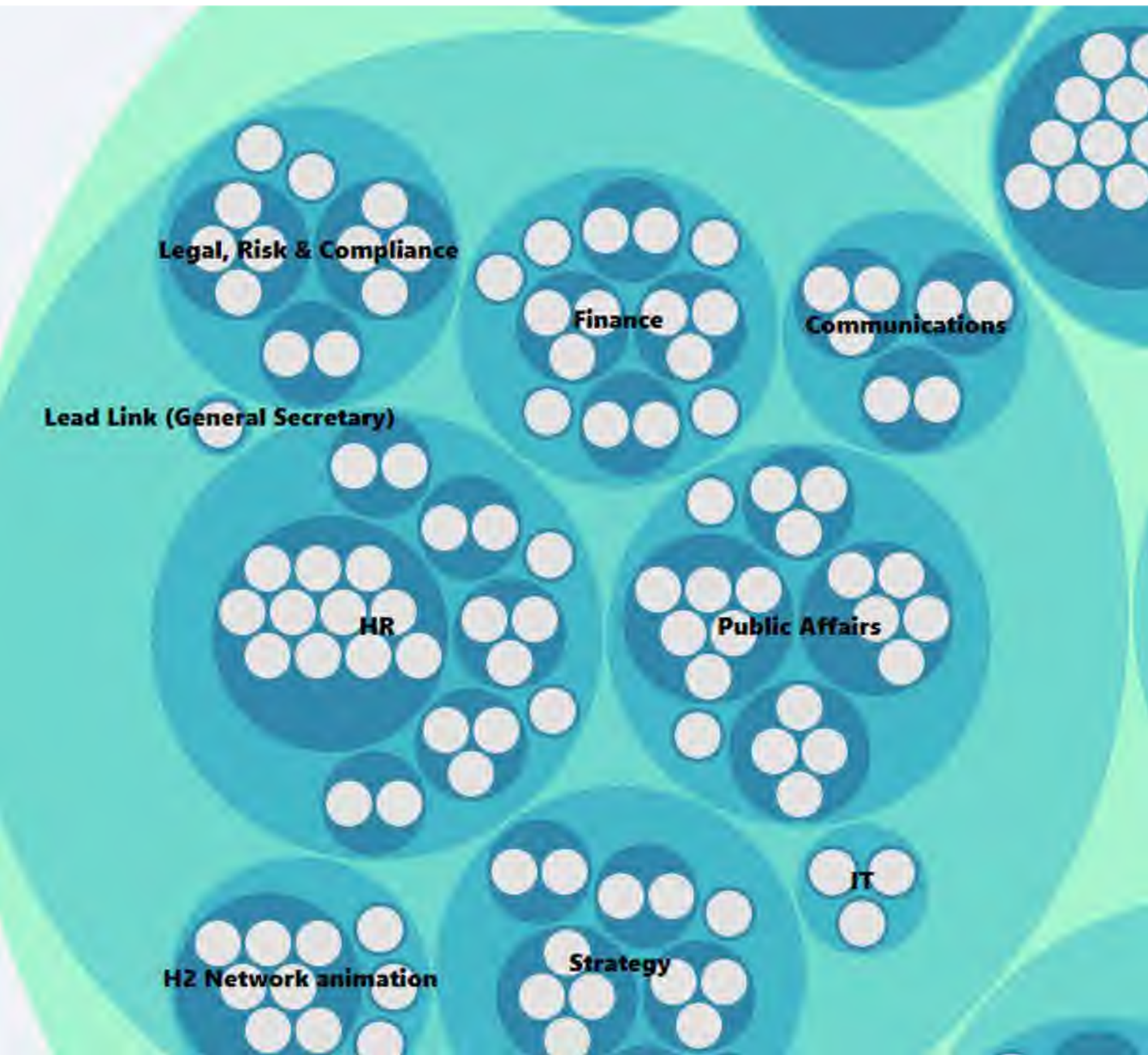
492 CORPORATE / ENGIE Lab CRIGEN FRANCE

Guy-Alexandre GRANDIN / Julien MARTIN /
Jean-Baptiste DURANTIS / Alain GALTEAU / Jérôme POUTEAU





KNOWLEDGE MANAGEMENT



LOVE

H₂ BU ORGANISATION AND ACTIVITIES IN JUST 3 CLICKS

Love is a new digital tool that enables every colleague within H₂ BU to visualize and understand the role-based organization in place and its connection to hydrogen projects being carried out. The tool features optimized user experience to navigate between people, roles, teams, projects description and time spent per role. Several dynamic dashboards were designed to provide general overview projects’ portfolio and take a deep dive in a specific project. Time allocation sheets have been designed to every colleague to see how their professional time was spent over the past weeks/months. “Love” is easily replicable and can contribute to a more efficient understanding and monitoring of projects & people, and has proved to be particularly useful in Covid times when many colleagues are working from home.

121 HYDROGEN FRANCE
Marie ABIVEN / Iman AHMAR / David MOYAL / François-Xavier OLIVIERI

LegalChart

LegalChart is an in-house digital application for all of ENGIE’s legal and financial departments that transforms the creation, analysis, and visual representation of the legal organization charts of the Group’s 3,800 companies.

233 GLOBAL BUSINESS SUPPORT **FRANCE**
Leslie REVEL / Sandrine GUILBERT / Lucas GUTIERREZ



TRANSFORMATION

Responsible Business Board

The development and roll out of an external Responsible Business Board of regional leaders to submit ourselves to scrutiny across a range of topics, related to CSR, People, Environment and Governance. Focusing on:

- 1. Ensuring Fair Business Growth
- 2. Being Transparent and Accountable
- 3. Being a Fair Employer
- 4. Supporting our Communities and Environment

295 STORENGY UNITED KINGDOM
Michael GIBSON / Jennifer ADDIS / Jack McMURRAY / Lily BERNADET / Graham CLARKE / Louise MASON



CulturBox
Value Optimization of M&A and Integration Activities

A cross-functional and cross-ENGIE BU team developed a methodology and toolkit to consider culture within M&As and integration processes, allowing teams to:

- 1) assess current state of the two merging organizations and to analyze them against ENGIE’s core desired culture attributes;
- 2) clearly identify areas of alignment and divergence; and
- 3) enable integration teams to create a plan for successful cultural integration.

The creation of a cohesive approach and supporting tool for cultural integration is new to ENGIE; its flexible methodology is innovative in its broad relevance and applicability.

547 IMPACT / CORPORATE FRANCE, USA
Hester YORGEY / Maria GAINAR / Emmanuel FRANCE / Sephora MONIN-BARBIER

Open Collaboration
“A spark in the tunnel of the 1st COVID crisis”

In March 2020, the Innovation Trophy team demonstrated that it was possible to collaborate efficiently with more than 50 people for two days in telework, achieving its objectives: selecting the 100 best innovations 2020 and team building within the Innovation Community. This experience encouraged its participants to engage initiatives of the same nature within their internal communities, without waiting for the crisis to end, thus accelerating the appropriation of collaborative digital tools, revitalizing communities and cooperation, while reviving business dynamics. Co-construction and enthusiastic replications of this event revealed its innovative components, amongst which open-collaboration widely mobilized at ENGIE, through its communities.

011 CORPORATE & OTHER BU - FRANCE, PERU... WWW!
Florence CARIOU / Élodie DU FORNEL / Isabelle FONDIMARE / Élisabeth GRABOWSKI / Bahiya SOUDJA / Mohamed BENKHODJA / Ingrid SAVORNIN / Christine LEROY / Jérémie MARCHAND & more



ENGIE CARES

076 The anti-rotation arch
ENGIE SOLUTIONS /
COFELY FRANCE

082 IronMan-Tenance
FRANCE RENEWABLE ENERGY

243 Influence search engines to attract more technician candidates!
BENELUX

346 ENGIE Care
Corporate - WORLDWIDE

359 LorinBubble
Social distancing
mobile application
Generation Europe- BELGIUM

497 “Women in our neighborhood” Project: Empowerment and Resilience
BRAZIL

 **508 “No life at risks” enforced thanks to Artificial Intelligence**
MESCATA COTE D'IVOIRE,
SAUDI ARABIA

557 We connect more Peruvians
LATAM PERU

RENEWABLES

007 SolEye
FRANCE RENEWABLE ENERGY /
ENGIE GREEN



036 Benefit from PPA as a BtoB customer, regardless of your size
ENGIE SOLUTIONS - COFELY /
SOVEN / ENGIE GREEN /
SHEM / E&C / GEM FRANCE



050 CleanRight
TRACTEBEL / BE TRIS /
LABORELEC - BELGIUM

178 Blue Carbon Project
MESCATA UNITED ARAB
EMIRATES

206 The VPPx Project by Simply Energy
ASIA-PACIFIC AUSTRALIA



219 WAKE UP!
FRANCE RENEWABLE ENERGY /
ENGIE GREEN

371 TriceR
TRACTEBEL BELGIUM

473 TracToZero
TRACTEBEL BELGIUM

488 Bat Deterrent
FRANCE RENEWABLE ENERGY /
ENGIE GREEN

543 Biodiversity Matrix Program
BRAZIL

ENERGY SOLUTIONS

044 Iceflake
ASIA-PACIFIC CHINA

046 TablePointer
ASIA-PACIFIC SINGAPORE



065 Reduces CirculAir
BENELUX THE NETHERLANDS

137 NEMO x TABREED
CORPORATE / ENGIE DIGITAL /
MESCATA FRANCE, UNITED
ARAB EMIRATES

170 HIVE
STORENGY / ENGIE Lab CRIGEN /
Tractebel / ENGIE Impact
FRANCE - FINLAND

183 Multidrain Drilling
ENGIE SOLUTIONS FRANCE



305 Alternative Subscription “Zero Carbon” Heating Network
ENGIE SOLUTIONS FRANCE

380 ENGIE Zero
UNITED KINGDOM



417 Solar AI
ASIA-PACIFIC SINGAPORE

433 SARS-COV-2 in the air
ENGIE SOLUTIONS FRANCE

496 “Healthy Building” Offer
ENGIE SOLUTIONS FRANCE

NETWORKS AND GREEN GAS

194 LNGauge
CORPORATE /
ENGIE Lab CRIGEN FRANCE

257 Picachaux
CORPORATE /
ENGIE Lab CRIGEN FRANCE



334 ePortalDCSR
NECST ROMANIA

355 Biomethane Network Pressure Reduction Unit
GRDF FRANCE



521 GAYA
CORPORATE /
ENGIE LAB CRIGEN /
ENGIE SOLUTIONS FRANCE

HYDROGEN

009 **HypSTER**
STORENGY FRANCE

112 **P.Hy.G**
STORENGY FRANCE



224 **Hydrogen on site solutions from Lab to Fab to Business**
CORPORATE - ENGIE NEW VENTURES - **ENGIE Lab CRIGEN** / TRACTEBEL / United Kingdom / NECST

232 **Hynetherlands**
GENERATION EUROPE THE NETHERLANDS

430 **HyPort, the first green hydrogen station at an airport**
TRACTEBEL / ENGIE SOLUTIONS / GNV FRANCE

THERMAL...
OPERATIONAL EXCELLENCE
AND DECARBONIZATION



039 **Turbo Coat**
GENERATION EUROPE BELGIUM

172 **Bladeboosters**
GENERATION EUROPE BELGIUM

199 **KerolHyme**
TRACTEBEL BELGIUM

221 **The KNIP project**
NUCLEAR BELGIUM

420 **DKarb6**
GENERATION EUROPE FRANCE

470 **Innovative CO₂ based Antiscaling Treatment**
TRACTEBEL / LABORELEC BELGIUM



574-20 **Colombus**
GENERATION EUROPE BELGIUM

ENERGY
SUPPLY

020 **Let's co-create a sustainable world with our clients!**
GEM BELGIUM, FRANCE, USA, THE NETHERLANDS, SWITZERLAND

075 **SPOORS**
FRANCE BTOC

185 **Cash Back for Customer Groups**
ENGIE ENERGY ACCESS ZAMBIA

327 **Customer Finance Program**
BENELUX BELGIUM



328 **Teleportation to Customer Homes**
FRANCE BTOC - ENGIE HOME SERVICES

406 **Speech Analytics & quality management automation of our customer calls**
FRANCE BTOC

486 **happ-e by ENGIE**
FRANCE BTOC



511 **Mon Programme Pour Agir**
FRANCE BTOC

CHANGE WITH THE WORLD



002 **Why Gas Origin matters!**
GEM ITALY, BELGIUM, FRANCE, USA, UNITED KINGDOM, SWITZERLAND, SINGAPORE

011 **Open Collaboration**
CORPORATE & OTHER BU - FRANCE, PERU... WWW!

014 **RESCO**
GEM BELGIUM, FRANCE, GERMANY, THE NETHERLANDS

121 **LOVE**
HYDROGEN FRANCE

233 **LegalChart**
GLOBAL BUSINESS SUPPORT FRANCE



282 **FREE- Finance Robotics ENGIE Evolution**
LATAM MEXICO

295 **Responsible Business Board**
STORENGY UNITED KINGDOM

396 **Pilot financing for a greener future**
LATAM CHILE

492 **MIRORS**
CORPORATE - ENGIE Lab CRIGEN FRANCE

547 **CulturBox**
IMPACT / CORPORATE FRANCE, USA

The TI-2021 “goodies” is a Card Game.

Like any standard card game, it offers hundreds of hours of fun, and develops memory.

Here are the Arcanes to understand what the cards represent:

- **Aces** are the 4 projects Finalist in Category Success Story
- **Kings** those from Customer Relations because the “Client is King”
- **Queens & Jacks** logically represent the 8 Finalists in Business Development
- **Colors are each associated to a GBU.**
Since reality is less simple than a card game, the split between GBUs is neither equal, nor cleancut.

51 finalists, but 60 cards in deck?

The 52nd Play card didn’t make the finalists’ list, but it is worth finding and remembering!

To reach the total of 60 cards in the deck, we added **8 trump cards**, memorable projects, each associated to a color.

There are the 3 other selected **Success Story** (that didn’t make it to Grand Jury – very tough decision) ... and 5 other projects we decided would be nice to add to the deck.

All the projects in the deck, and 4 more are published in this e-brochure **ENGIE “Our Innovations 2021”**



MEMBERS OF JURY

Claire **Waysand** (President), Sébastien **Arbola**, Jean-Sébastien **Blanc**, Maxime **de Bonrepos**, Laurent **Cardyn**, Anne-Laure **de Chammard**, Pierre **Cheyron**, Franck **Demaille**, Bernard **Esselinckx**, Igor **Grela**, Didier **Holleaux**, Martin **Jahan**, Csilla **Kohalmi-Monfils**, Yves **Le Gélard**, Éric **Lestanguet**, Aurélie **Mouret**, Cécile **Prévieu**, Silvestro **Russo** (Solar Impulse Foundation), Édouard **Sauvage**, Guillaume **Toublanc** (EIT Digital France), Karine **Verdier** (Inno Energy France), Michael **Webber**.

INNOVATION TROPHIES TEAM 2021

Marie **Abiven**, Martial **Archenault**, Valérie **Beaudichon**, Léo **Bénichou**, Marie-Laurence **Berlioz**, Laurent **Berthier**, Maxime **de Bonrepos**, Laurence **Borie-Bancel**, Mike **Boudreaux**, Guillaume **Bregentzer**, Diego **Buendia**, Florence **Cariou**, Léopold **Cazaux**, Nathalie **Chabert**, Rebecca **Chen**, Judy **Cheng**, Cécile **Cordier**, Katja **Damman**, Franz **Danyach**, Philippe **De Raedemaeker**, Gaëtan **Deckers**, Marie-Véronique **Deydier**, Pierre **Didier**, Razvan **Dordea**, Isabelle **Drochon**, Audrey **Dugal**, Marie-Perrine **Durot**, Valérie-Ann **Duval**, Marijke **Enserink**, Marc **Eyckmans**, Carole **Filhol**, Isabelle **Fondimare**, Élodie **du Fornel**, Marianne **Gallardo**, Jaime **Garrett**, Etienne **Gehain**, Raphaël **Genin**, Valérie **Gibert**, Stephan **Gobert**, Fabian **Gonzalez**, Carlos **Gothe**, Frédéric **de Goyon**, Elisabeth **Grabowski**, Jérôme **Guérin**, Carole **Henry**, Karina **Howlett**, Gillian **Huart**, Christophe **Huguet**, Karime **Karoui**, Saul **Kempner**, Markus **Kirsch**, Csilla **Kohalmi-Monfils**, Dimitri **Laloux**, Eleonora **Lambridis**, Régis **Lavisse**, Franck **Le Baron**, Christine **Leroy**, Catherine **Levy**, Mamadou **Lo Gueye**, Erika **Mendoza Sollis**, Rabii **Mama**, Philippe **Métais**, Ana **Meyer**, Pauline **Millot**, François-Xavier **Olivieri**, Maryline **Pineau**, Gauthier **Polet**, Alain **Quinqueneau**, Jesse **Rebello**, Caroline **Renier**, Jean-Michel **Reynaud**, Alice **Richard**, Daniel **Rossi**, Didier **Roncière**, Martin **Ruane**, Amir **Santhiya**, Pierrick **Sauret**, Samuel **Saysset**, Olivier **Servoise**, Bahiya **Soudja**, Clément **Souillet-Désert**, Brieuc **Spindler**, Amanda **Stannard**, Doug **Stein**, Samuel **Taylor-Baumont**, Thomas **Thévenin**, Virginie **Verdière**, Raf **Verheyden**, Sébastien **Vinant**, Marie-Laurence **Wacquez**, Abigail **Ward**, Ben **Watts**, Michelle **Woo**, Mures **Zarea**, Jochen **Zemrozer**.

THE 6 COACHES

Christina **Balanos**, Robert **Burns**, Charlie **Fargialla**, Zacharie **Saal**, Stefanie **Selen**, Nathalie **Simon**.

AND THE 200 EVALUATORS WHO COMPLETED OVER 2,000 FILE REVIEWS ONLINE



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2021

OUR INNOVATIONS

