Commissioner Carlos Moedas

Visit by [redacted] of General Electric Company

LOW 6H202 - Strasbourg

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15h00-15h45

Cabinet Member:
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0. AGENDA OF MEETING / PROGRAMME OF EVENT

There is no formal agenda but the following topics have been suggested:

- European Fund for Strategic Investments (EFSI)
- Energy policy/research and innovation
- Big data/cloud computing

Other topics that could be raised include:

- Preliminary Commission enquiry into General Electric's proposed takeover of Alstom's energy business

Key messages

- The European Fund for Strategic Investments (EFSI) will mobilise critically needed additional investment across Europe; contributions from the private sector, including major players such as General Electric (GE), are essential.
- The Energy Union relies on research and innovation to be a success; innovation leaders such as GE have an important role to play.
- Big Data analytics and Cloud Computing offer significant opportunities for both economic development and the advancement of science.
- Controversial Issue: The European Commission opened an in-depth investigation to assess whether GE's proposed acquisition of the Thermal Power, Renewable Power & Grid businesses of Alstom is in line with the EU Merger Regulation.

1. STEERING BRIEF

1.1 Scene setter

The [redacted] of General Electric Company, [redacted], asked for this meeting. [redacted] will also meet the Commissioner for Climate and Energy, Miguel Arias Cañete (on 29 April). This is essentially a courtesy visit, but with three discussion items suggested by the Cabinet member: EFSI, energy policy and research & innovation, and big data/cloud computing. Other items could well come up, including GE's proposed takeover of Alstom's energy businesses.

General Electric (GE) is an American multinational conglomerate corporation incorporated in New York and headquartered in Fairfield, Connecticut. The company presently operates across several areas: Power and Water, Oil and Gas, Energy Management, Aviation, Healthcare, Transportation, and Capital.

GE recently announced that it will sell off most of its Capital division, following heavy losses in the wake of the financial crisis, to concentrate again on its core industrial engineering business lines.

GE is considered to be one of the most innovative (as well as one of the biggest) industry players in the energy field world-wide (based on a recent ranking by Questel Consulting).[1] GE, through its subsidiary GE Healthcare, is also one of the largest companies worldwide in the field of biomedical imaging and diagnostics, with growing activities in patient monitoring systems and information technologies.

GE is marginally involved in EU Research and Innovation Programmes (FP7 and Horizon 2020 – See background).

In 2011, GE is ranked 26th amongst Fortune 500's largest US firms in terms of gross revenue, as well as the 14th most profitable (the company is listed the fourth-largest in the world among the Forbes Global 2000). GE's worldwide operations include important interests in Europe, with over 90,000 employees at 900 locations and 19 billion Euros in annual revenue.

On 23 February 2015, the European Commission opened an in-depth investigation to assess whether GE's proposed acquisition of the Thermal Power, Renewable Power & Grid businesses of Alstom is in line with the EU Merger Regulation. The Commission's preliminary investigation indicates potential competition concerns in the market for heavy-duty gas turbines which are mainly used in gas-fired power plants. The acquisition would bring together the activities of GE, the world's largest manufacturer of heavy-duty gas turbines, with those of Alstom, thereby eliminating one of the three main global competitors to GE in this market. The opening of an inquiry does not prejudge the final result of the investigation. The Commission now has 90 working days, until 8 July 2015, to take a final decision.

[1] The study was commissioned by KIC InnoEnergy, one of several Knowledge & Innovation Communities funded by the European Institute of Innovation and Technology (EIT), an independent body of the European Union established in March 2008, with the mission to increase European sustainable growth and competitiveness by reinforcing the innovation capacity within the EU.

1.2 Objectives

- Become acquainted with the [redacted] General Electric, [redacted], and exchange views, particularly with regard to research and innovation and investment priorities, with a focus on energy and big data/cloud computing.

- Communicate the importance of EFSI to stimulate further investment in Europe, and invite views and contributions from [redacted]/General Electric.

- Outline the Energy Union initiative, explain the role of the private sector for its success, and invite contributions from [redacted]/General Electric.

- Share information about European Commission initiatives regarding Big Data and cloud computing, particularly the Digital Single Market Initiative and the European Research Cloud.

- Share information about the opportunities offered by the Innovative Medicines Initiative for companies beyond pharma to become Associated Partners.

1.3 Line to take

1.3.1 European Fund for Strategic Investment (EFSI)

- *Stress* that EFSI will raise EUR 315 billion in additional investment which otherwise would not materialise.

- *Underline* that a key goal of the EFSI is to generate investment in research and innovation and to turn Europe into a knowledge-based economy.

- *Highlight* that projects will be chosen based on strict quality criteria; there will be no country-specific or sector-specific quotas.

- *Emphasise* that contributions from industry and innovation leaders such as General Electric, with its strong European base, would be especially welcome.

1.3.2 Energy Research and Innovation

- *Highlight* the key benefits of the Energy Union – making the European energy system more secure, sustainable, affordable and competitive.

- *Stress* that Research and Innovation is crucial for the success of the Energy Union and is one of its five mutually-reinforcing and closely interrelated dimensions.

- *Emphasise* that creating stronger partnerships between industry, public administration and research and innovation actors is vital. Contributions from the private sector will be especially important, particularly from industry and innovation leaders such as GE.

- *Inform* that DG RTD is currently collecting views of private stakeholders on EU regulatory bottlenecks to innovation. GE's suggestions on this issue would be welcome.

1.3.3 Big Data/Cloud Computing

- *Stress* that the European Commission with its Digital Single Market (DSM) initiative aims to provide a truly European single market for digital innovators like GE to operate under favourable conditions.

- *Emphasise* that EU Research Framework Programmes, and in particular Horizon 2020, have been the biggest single transnational EU Programmes to support the development and the application of digital technologies.

- *Emphasise* that Big Data Analytics is driving innovation for new products and services and shaking up large parts of the industry, as well as the driving force behind data-driven science.

1.3.4 Associated Partners in IMI

- *Highlight* that the European Commission together with the pharmaceutical industry has created the largest health-related research and innovation public-private partnership in the world, the Innovative Medicines Initiative IMI.

- In 2014 IMI2 was launched with a total budget of € 3.3 billion. It is open for health-related industries such as GE to become Associated Partners, thereby becoming involved in the definition of research priorities to be supported by EU funding, in return for at least equal in-kind contributions.

2. SPEAKING POINTS

2.1. European Fund for Strategic Investments (EFSI)

- Launching the European Fund for Strategic Investments (EFSI) was one of the first acts of the new Commission. Its goal is to mobilise the financing of new investments that would otherwise not take place, and is aimed at strategic projects around Europe to ensure that money reaches the real economy. We are committed to raising an extra EUR 315 billion, using the expertise and credit rating of the EIB, and to stimulating private capital.
- President Juncker has been clear from the start that projects will be chosen on strict quality criteria and no country-specific or sector-specific quotas. This is critical so as to crowd in private investors and private capital.
- Projects will be selected based on their additionality (that is, that they could not secure financing through other means), as well as their economic viability, reliability and credibility, and from key growth-enhancing areas in line with EU policies. These include knowledge, innovation and the digital economy; energy union; transport infrastructure; social infrastructure; and natural resources and the environment.
- Horizon 2020, the principal European Research and Innovation programme (nearly €80 billion for the period 2014-2020) and the Investment Plan share similar goals and are therefore complementary and mutually reinforcing. At the same time, EFSI will have a different risk profile from Horizon 2020 and will be able to support higher risk projects, which is key for research and innovation.
- Contacts with the private sector have shown that investors put particular emphasis on the robust quality and independent selection of projects that could be supported by the Investment Plan. Projects should be (1) economically viable with the support of the initiative, (2) sufficiently mature to be appraised on a global or local basis, (3) of European added value and consistent with EU policy priorities (such as, for example, the 2030 climate and energy package, Europe 2020 Strategy and other long-term EU strategic priorities). Moreover, projects should not be limited to cross-border projects.
- The European Commission would be interested in your views on EFSI, and more particularly, what contribution an industry and innovation leader such as General Electric, with its strong European base, could make to increase strategic investments and raise the level of innovation in Europe, especially in the energy domain.

2.2 Energy Research and Innovation in the Context of the Energy Union

Introduction

- Just like EFSI, the Energy Union is part of the Juncker Commission's top priorities. It brings together all relevant aspects of the EU's energy policy-making and its research and innovation activities in the energy and related domains, including climate change and transport.
- Its fundamental goal is to give EU consumers, households and businesses, secure, sustainable, competitive and affordable energy. Achieving this goal will require a fundamental transformation of Europe's energy system, a greater level of cooperation and more solidarity among the 28 Member States.
- The European energy system faces ever more pressing needs to ensure secure (e.g. crisis with Ukraine and Russia and the fact that the EU imports more than 50% of the energy it consumes – 53% in 2013), sustainable (e.g. ambitious in coherence with EU position in the 21th Conference of Parties COP 21 on Climate (United Nations Framework Convention on Climate Change in Paris on 2015), affordable and competitive energy for all citizens. In its present state, and without a fundamental transformation that transcends old technologies, business models, and governance structures, our energy system is simply not up to the challenge.
- The Energy Union was launched on 25 February 2015 and was well received by both the Member States and the general public. It is now winding its way through the European institutions. The European Council of 19 March gave it its blessing and will come back to review progress before the end of the year.

Energy Union and Research & Innovation

- The Energy Union will rely heavily on Research and Innovation (R&I). R&I is one of the five mutually-reinforcing and closely interrelated dimensions of the Energy Union and it also underpins the delivery of the other four dimensions:
    - Energy security, solidarity and trust (e.g. diversification of energy supply thanks to new technologies);
    - A fully integrated European energy market (e.g. socio-economic research related to the role of citizens);
    - Energy efficiency contributing to moderation of demand (e.g. in buildings but also importantly in industrial processes and manufacturing); and

- Decarbonising the economy (e.g. low-carbon technologies - renewables as well as nuclear – including transport with alternative fuels).

- A revitalised R&I strategy lies at the very heart of the Energy Union. We are still leaders in innovation and renewable energy, but other parts of the world are catching up fast and we have already lost ground when it comes to some clean, low carbon technologies (e.g. first generation photovoltaics).

Research & Innovation Actions in the Energy Union

- R&I actions will be grouped around the following four core priorities, to which Member States and the Commission would commit:
  - First, being the world leader in developing the next generation of renewable energy technologies, including the environmentally-friendly production and use of biomass and biofuels, together with energy storage;
  - Second, facilitating the participation of consumers in the energy transition through smart grids, smart home appliances, smart cities, and home automation systems;
  - Third, efficient energy systems, and harnessing technology to make our buildings energy neutral;
  - And finally, more sustainable transport systems which will develop and deploy large-scale innovative technologies and services to increase energy efficiency and to reduce greenhouse gas emissions.
- In addition to these four common priorities, more coordination will also be required addressing carbon capture and storage as well as safer nuclear energy, within those Member States active in these fields. These two technologies are part of the EU's overall strategy for decarbonising the energy system.
- These actions will be at the core of a new strategy for R&I which will be at the very heart of the Energy Union. This new strategy will encompass:
  - An updated Strategic Energy Technology (SET) Plan (all R&I aspects related to the demand and production of energy including its optimisation);
  - Research & Innovation agenda (use of energy in transport which is responsible for 25% of all C02 emissions in the EU);
  - An initiative on EU global technology and innovation leadership on energy and climate to boost growth and job.

- The implementation of this new strategy will be supported by Horizon 2020, the European Research and Innovation programme (nearly €80 billion for the period 2014-2020). In particular, the public-private partnerships on Fuel Cells and Hydrogen (new energy technologies), Clean Sky (greener aircraft), Bio-Based Industries (next generation of biofuels), Energy-efficient Buildings, Green Vehicles, Sustainable Process Industry (energy efficiency in industrial processes), and the European Metrology Programme (new standards for energy applications) will provide direct inputs. Investments in these partnerships will amount to more than €12 billion over seven years, half coming from public funds (through Horizon 2020) and half from industry.
- The success of the Energy Union will rely largely on attracting more private investment and this of course also applies to R&I. I will ensure that a set of new financial instruments are put in place to foster this investment by supporting part of the risks associated to innovative projects that are ready to be deployed to the market. This represents a new approach for R&I in Europe, which was concentrated until recently not on investment but on grants.
- Contributions from industry-leading companies such as General Electric which is firmly anchored in Europe, are critical for making this new approach a reality.
- In addition, Horizon 2020, the EU's main instrument to fund Research and Innovation particularly in the domains where GE is strong, is open to the world and we welcome your participation.
- I would be interested to hear your views about the Research and Innovation priorities of the Energy Union, and if these new orientations might influence the way General Electric is investing in Europe.
- As a major industrial player worldwide, have you identified in the EU specific regulatory barriers to innovation in your areas of activities which hinder innovation? I would be most interested at receiving your views on this issue.

2.3. Big Data / Cloud Computing

- Big Data analytics are instrumental for improving productivity and reliability in every activity area, including energy, transportation, manufacturing, health and science.

- In addition to its great economic benefits, using Big Data analytics can have an equally important positive impact on the environment, by reducing energy consumption and waste.
- In response to these opportunities, the Digital Single Market, another top priority of the Juncker Commission, under the leadership of Vice President Ansip, will identify and address problems that might impede the free movement of goods, persons, services and capital in the digital economy and hold back digital innovation.
- The Digital Single Market addresses a broad range of issues, including several issues that affect Big Data analytics and Cloud Computing:
    - Copyright and digital licencing framework;
    - Revision of Data protection legislation. One legal framework for all Europe;
    - Regulatory framework for telecom operators and content providers;
    - Actions on Security, contractual law etc.;
    - Actions on open access to data.
- The application of Big Data Analytics to science, data-driven science, is a major factor underpinning the transition towards Open Science. It contributes to making science more efficient (through faster knowledge circulation and more synergies); more reliable (through open access and easier replicability); and more responsive to the needs of society. Horizon 2020 for the first time requires Open Access for all scientific publications funded under the programme.
- A particular aspect which has been identified as crucial is the possibility for all researchers from any field to have access to a universal Open Science Cloud, where the results of his/her research can be easily stored and later managed, and where he/she will have easy and free-of-charge access to the data from other researchers.
- This would make research data accessible from anywhere (provided access rights have been granted) thus facilitating Big Data Analytics and data-driven science.
- This is not new for the business sector, where Cloud Computing services allow firms to scale up or down their ICT capacity (data storage, management and processing) with very little setup cost.
- I would be interested to hear your views about a future European Open Science Cloud, as well as any concrete contribution General Electric could make.

2.4. Opportunity for GE to become Associated Partner in IMI2

- As you may be aware, together with the European pharmaceutical industry as represented by EFPIA (European Federation of Pharmaceutical Industries and Associations) the European Commission in 2008 created the largest public-private partnership in health research and innovation in the world, the Innovative Medicines Initiative (IMI).
- IMI has proven that it can bring together researchers from academia, SMEs and large industry to address public health issues of vital interests for citizens, delivering on new approaches for diagnosis, patient stratification and therapy in diseases such as diabetes or Alzheimer's.
- In the second round of IMI, started last year, we have decided to make it open to industries beyond pharma to become Associated Partners, thereby becoming fully involved in the strategy setting.
- I consider that this offers a great opportunity for the healthcare business of GE to becoming involved in IMI and I would be happy to make the necessary connections between your company and the IMI programme office as well as the pharma industry association EFPIA.

3. DEFENSIVE POINTS

3.1 European Fund for Strategic Investment (EFSI)

When do you expect a final decision on the EFSI? What is the state of the negotiations with the European Parliament?

The normal procedures are taking their course and we will have to wait for the results, probably by July. The European Parliament is on-board in principle but would like a greater role in the governance of the EFSI and has doubts regarding the planned transfer of funds from Horizon 2020 and the Connecting Europe Facility (CEF). Discussions are ongoing.

What is your response to those saying that it wrong to divert money from Horizon 2020 to the EFSI?

It is true that the proposed redeployment of EUR 2.7 billion from Horizon 2020 has been criticized by some, but it represents only 3.5% of the total budget for 2014-2020. Moreover, EFSI will itself contribute a great deal to innovation in Europe; it's goals are therefore complementary to those of Horizon 2020 and there will be many synergies.

3.2 Energy Research and Innovation

In your opinion, when will the European Commission make its decision regarding the proposed acquisition of the Thermal Power, Renewable Power & Grid businesses of Alstom? What do you think will be the outcome?

I cannot prejudge the outcome of the preliminary investigation, but I do share the concerns of my colleagues that this acquisition would affect the market for heavy-duty gas turbines that are used in gas-fired power plants. It would notably eliminate one of the three main global competitors to GE in this market, which could have negative consequences for competition but also innovation and research in this area in Europe. I think the Commission will be particularly vigilant with regard to GE's commitment to maintain a substantial level of R&D in Europe and to help boost its economy, and it will be mindful of preserving competition in the field of heavy-duty gas turbines.

GE is already one of the main global players in the market for heavy-duty gas turbines, a position that will only grow stronger following the acquisition of Alstom's Thermal Power, Renewable Power & Grid businesses. Given our strong interest in this sector, we are concerned that gas-fired power plants in many parts of Europe have been forced to close and that gas can no longer compete with cheap coal, despite its obvious environmental benefits. What does the Commission intend to do to change this situation?

Gas markets tend to be regional not global, which explains why there are price differentials across Europe and compared to markets elsewhere. At the same time, the shale-gas boom in North America has made more and cheaper coal available in world markets. We are addressing this situation in different ways. For example, the Energy Union initiative puts much emphasis on a unified energy market all across Europe, which should help to unify and lower prices also for gas. Better interconnects and pooling of gas reserves should have a further positive effect. In addition, the planned reform of the EU Emissions Trading System

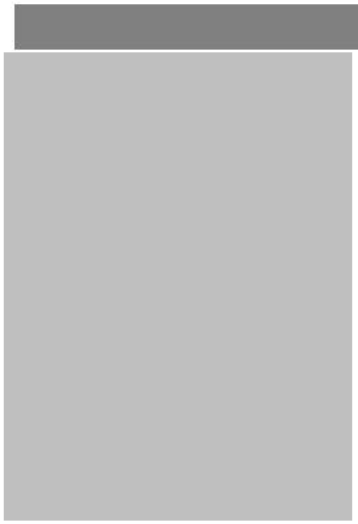
will help gas become more competitive with coal. With regard to R&I, making coal and gas power plants more efficient and more flexible is a priority in H2020 and the SET Plan.

We wonder if and in what way the acquisition of Alstom might have an impact on our access to EU R&I programmes. How is the European Commission going to address this issue?

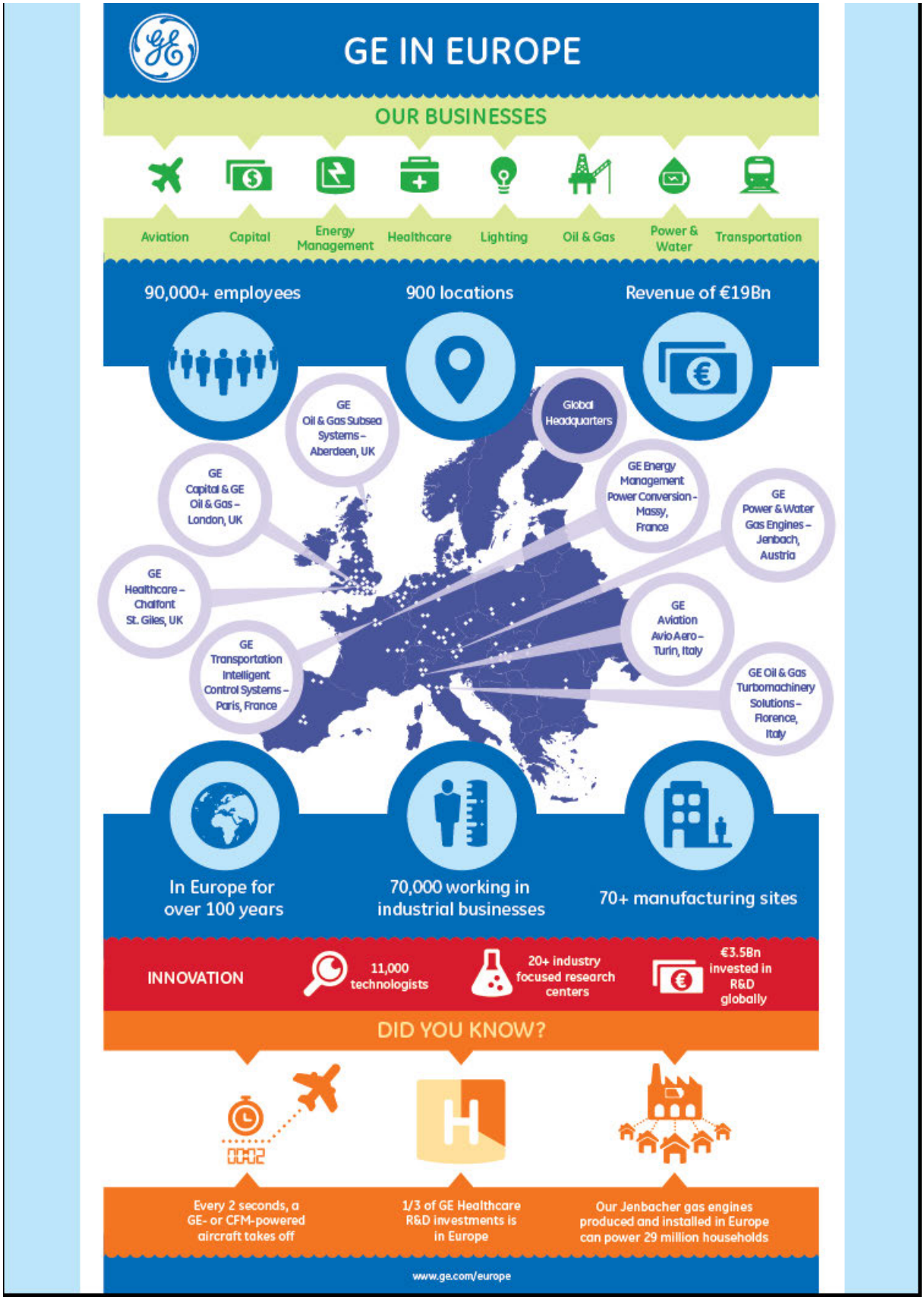
Horizon 2020 is fully open to international participation, provided that participants from developed economies such as the US bring their own resources to share in the benefits. The main benefits of international innovation partnerships are knowledge sharing and pooling of resources. Naturally, we have an interest also in sharing in the results of such partnerships, notably in terms of intellectual property, jobs, and industrial value chains. Any EU legal entity including subsidiaries of US companies are eligible for receiving EU funding but performing R&D and exploiting results in Europe are key aspects to be taken into consideration during the evaluation process.

4. BACKGROUND INFORMATION

4.1 CVs



4.2 GE in Europe infographic



4.3 Big data / Cloud computing

Big Data

- Big Data is a term that is used in connection to Data Sets that are so large and complex that traditional Data Processing tools cannot handle.
- Big Data is often defined as Data that are characterised by the three Vs: Volume, Velocity and Variety. Velocity refers to how fast data are produced, and variety to the fact that Big Data are often heterogeneous i.e. they do not fit into neatly designed data base schemas like data of traditional databases.
- Advancements in Data Science make it possible to handle Data of such Volume and complexity, using specialised software and hardware.

Big Data and Science

- Big Data analytics have application in many fields, including Science. Access to vast amount of data and to the tools to analyse these Data makes it possible to use more inductive methods for Research, enabling Scientists to make connections that are not apparent.
- The power of Big Data comes from combining data from different sources. Often one Data Set alone has little value. Its value is increased when combined with other Data sets from different sources. Open Access to data is therefore the catalyst for creating the right conditions for Data Intensive Science.
- The European Commission is promoting open access to data, under the EU's Framework Programme for Research, Horizon 2020.
- The European Commission also helps initiatives that bring different actors in the Research and Industry areas together, to form partnerships that aim in preserving and giving access to large data sets to its partners. Examples: Copernicus, Helix Nebula Science Cloud
- In addition to Open Access of scientific data the Commission is supporting standardisation efforts that address issues of interoperability and discoverability of scientific data. This is done through its support to the Research Data Alliance a bottom up initiative which is built on the model of the Internet Engineering Task Force (IETF), the open standards organisation that produces and maintains the standards for the Internet.

European Research and Science Cloud initiative

Several research infrastructures already host scientific data in a decentralised fashion. Additional science data is stored locally and is often inaccessible. As of today, there is no single Europe Research and Science Cloud. Commission and MS-funded initiatives in this domain are seminal, thus there is no directly usable blueprint for technical, financial and governance choices.

The European Research and Science Cloud initiative aims to offer European researchers a virtual environment with open and seamless services for data storage, management and analysis, notably by bringing existing and newly developed e-infrastructures under a common governance structure and by supporting the development of services for data analysis and exploitation. The European Research and Science Cloud initiative is part of Europe´s ambition to support the transition to Open Science; it aims to meet an urgent, real and specific

need of the scientific community, to streamline the procedure for data access and re-use, and to reduce the cost of data storage and analysis for research funders. The European Research and Science Cloud would ensure that the enormous amount of valuable scientific data that Horizon 2020 projects generate will be available for re-use by the entire scientific community.

The European Research and Science Cloud initiative promotes a very different use model from the one existing today, where storage and access to data is at best fragmented and there is no clear financing model for sharing the cost of data preservation and re-use (ad-hoc solutions). The model is science-specific and leverages the significant public investment in e-infrastructures of the last two decades.

Based on the mould of the Helix Nebula infrastructure, the European Research and Science Cloud initiative aims to build on and federate existing e-infrastructures and to provide a governance framework that ensures wide availability of scientific data and data-analysis. Overall, the European Research and Science Cloud initiative would need:

- A federated infrastructure that will allow data deposit by scientists and to make data findable, accessible and usable. This includes protocols and standards for access and use of the data (data and service layer).
- A governance and business model that sets the rules for the use of data; deals with problems related to privacy, copyright and security; and oversees the provision of services using the underlying Infrastructure (business and governance layer).

The initiative appears to have broad support among Member States, scientific stakeholders and scientists, who favour a Cloud that is stakeholder driven, bottom up and responding to the needs of scientists from all disciplines. An overall coordination and action plan aligning the various stakeholders/actions and creating critical mass is now needed.

Financing may be obtained via Horizon 2020, EFSI and/or ESIF. The service and governance layers may be best served by Commission-controlled instruments, while EFSI/ESIF funds would be used to federate the e-infrastructure layer, thus involving Member States directly.

4.4 Participation of General Electric to FP7 and Horizon 2020

GE is marginally involved in EU Research & Innovation programmes

FP7	
Area	**EU contribution in million Euros**
Large Public-Private partnership – Clean sky (Greener aircraft)	2.2
Wind Energy	0.5
Nano-technologies	0.1
Health (Brain research)	0.3
Mary-Curie	0.065
TOTAL	**3.2**

Horizon 2020	
Area	**EU contribution in million Euros**
ICT – Cyber-physical systems	0.64