



A French and Swedish strategic partnership for innovation and green solutions

Roadmap

17/11/2017

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This document sets out the framework of the strategic innovation partnership signed between the Governments of France and Sweden on 17 November 2017.

Purpose of the strategic partnership and roadmap

The overall purpose of this partnership is to strengthen the relationship and cooperation between France and Sweden in the areas of innovation, digital transformation and sustainable solutions. The cooperation should be built on the involvement of industry, start-ups, academia and the public sector.

This roadmap sets out the framework for cooperation and can be updated within a maximum period of two years. The roadmap has been drawn up in full recognition that national innovation systems in France and Sweden have different characteristics and that this variety is an asset in this cooperation. The intention is to draw attention to areas where action may help to address the two main challenges that our societies are facing, i.e. digital transformation and climate change.

Structure and Implementation of the Work Programme

The work programme has been developed with the help of input from strategic discussions at a political level, and from public authorities and private actors. The work programme focuses on four priorities and areas of action, each with its own specific activities:

1. Green solutions for transport, clean energy and smart cities
2. Green finance for a climate-resilient economy
3. Digital transformation, smart industry and start-ups
4. Health and life sciences innovation

Activities outlined in this work programme will be implemented by a different set of stakeholders without seeking to be prescriptive regarding the mode of implementation. Where appropriate, existing collaborative structures on both EU and national level should be used, such as Eureka, Horizon 2020, and the Swedish Innovation Partnership Programmes (IPPs). To enhance possibilities for future cooperation, the joint work stipulated in this roadmap will be followed up at operational and strategic level by the French Prime Minister's Office and the Swedish Ministry of Enterprise and Innovation.

Priorities and Areas of Action

1/ GREEN SOLUTIONS FOR TRANSPORT, CLEAN ENERGY AND SMART CITIES

Sharply reducing greenhouse gas emissions from the transport sector is a key objective for both Sweden and France, as transport accounts for the major part of CO₂ emissions. Sweden has already set a goal to reduce domestic transport emissions (not including aviation) by at least 70 per cent by 2030 compared with 2010. France has announced its ambitions to end the sale of cars that run on fossil fuels by 2040. The research dimension is essential for this objective. The Swedish Innovation Partnership Programmes (IPPs) embody a collaborative approach to innovation to establish commercially viable solutions and job creation. The IPPs serve as a concerted effort to find innovative solutions to a number of major and global challenges and could contribute to this partnership.

Exchanges on fuel-efficient vehicles, a shift to zero-emission vehicles and transport systems

Fuel-efficient vehicles and a shift to zero-emission vehicles are essential for reducing the transport sector's climate impact, as set out by both Sweden and France in their climate plans. High speed railways can also have an important role in this ambition. New solutions are required if we are to meet future needs for efficient travel and transport and the challenge of climate change.

A discussion and exchange at ministerial level are therefore proposed, with the possible participation of the most involved and active French and Swedish stakeholders, **on how to best achieve a competitive and fossil-free transport sector and shifting goods transportation from road to railway.**

Exchanges on testbeds

Sweden can offer testbeds for connected and automated driving in the cities of Stockholm, Gothenburg and along motorways. This can be done in a 5G environment. Another testbed area is electric roads for heavy traffic, where Sweden has installed test sites for the development of new solutions. France, which is developing its own national strategy, also believes that **developing the use of testbeds** is a key aspect of enhancing innovation in industry, especially in the automotive sector. France also proposes to offer testbeds such as Car2Road and Transpolis. Cooperation between Swedish and French automotive clusters, such as Mov'eo, Véhicule du futur and LUTB, could be reinforced, as well as exchanges concerning the Drive Sweden programme.

Exchanges on battery development

The strategic issue of internationally competitive European battery development for the automotive and other sectors has been discussed in several EU Members States. A French-Swedish exchange of views between relevant stakeholders on battery development will be organised at official level by 2018.

Exchanges on connected vehicles

Companies from both countries should also be invited to work more closely together on connected vehicles. This issue will be at the centre of the next SOLUTRANS trade fair in Lyon (November 2017), where Sweden will be the guest of honour. A joint workshop with Sweden and France will be organised. Furthermore, a team of French stakeholders will participate in the VECS (Vehicle Electronics and Connected Services) event in Gothenburg in 2018. The Swedish and French governments will work together within the framework of dialogues on connected and automated driving.

Exchanges on digital transformation of transport

According to collected data and analysis, digital transformation will play an increasing role in the transport sector. In Sweden, new mobility solutions, such as 'Mobility as a Service', big data analysis and cooperation, are being developed in collaboration with the private sector. In France, many companies have already developed innovative solutions based on big data analysis. **Exchanges on this issue could be organised between relevant parties in 2018, with a focus on regulation issues (at national and EU level) and consumer protection.**

Strategic partnership on clean energy

The development and implementation of clean energy is crucial for reaching our long-term climate objectives. Sweden and France are engaging in a strategic partnership with the aim of moving the global agenda forward and accelerating the transition to clean energy.

A starting point for this collaboration will be the Climate Summit on 12 December in Paris. **A meeting is proposed after the conference between representatives of the Swedish Ministry of the Environment and Energy and the French General Directorate for Energy and Climate to explore how the ambitions and announcements from the conference could be made operational through various international platforms.**

Sweden and France recognise the key role of multilateral providers of development finance in supporting investment in clean energy. In the long term, the aim should ultimately be to phase out multilateral development funding for fossil energy investments, with an aim to a zero-emissions society.

The Clean Energy Ministerial and the Mission Innovation are two important initiatives to support the implementation of the Paris Climate Agreement. The fact that Sweden, the European Commission and the other Nordic countries are hosting the 2018 Clean Energy Ministerial could be seen as a good opportunity for our countries to seek joint efforts to support the development and deployment of clean energy technologies.

Dialogue and exchanges on green, inclusive and sustainable cities

Building green, inclusive and sustainable cities is a major challenge for Sweden and France. Both countries are experiencing rapid growth in their largest cities' centres and strong pressure for increased urbanisation. Both countries face common challenges in providing innovative, efficient and sustainable public services. As the number of citizens increases, solutions in areas such as waste management, water treatment and transport are needed. Other challenges include planning an efficient and green transportation system, encouraging the construction of energy-efficient buildings, such as industrial wooden buildings that contribute to the bio-economy, increasing biodiversity, and promoting social diversity.

Both countries have long-term experience in this field and have implemented innovative solutions. In France, the ambitious Grand Paris project and the Confluence quarter in Lyon, Industrial Demonstrators for the Sustainable City and the EcoQuartiers and EcoCités labelling initiatives are examples of innovative solutions. In Sweden, the Hammarby Sjöstad ecoquarters, the wooden multi-storey buildings in Sundbyberg, the Vallastaden city district in Linköping and Stockholm Royal Seaport are all proof of innovative solutions and new models of social planning. Both countries have organisations such as Smart City Sweden and Vivapolis that enable various public and private stakeholders to collaborate and share their know-how on new innovative solutions. As a result:

- **A French-Swedish working group on smart, resilient and sustainable cities** with relevant stakeholders, for example representatives of the existing bilateral initiative Alliance, Smart City Sweden, Vivapolis and relevant

national and local authorities, could be initiated in early 2018, with the aim of exploring together the challenges that our cities face and have an exchange on technological innovation and best practices on project governance. This work should be partly based on the existing bilateral collaboration Alliance and include joint efforts to promote citizens' sustainable behaviour, innovation gateways, equity and environmental justice in urban efforts to address climate change, and scaling up energy efficiency retrofits.

- **A business workshop between French and Swedish stakeholders on Clean Tech/Green Tech and Smart Cities** could also be organised.
- Both countries also commit to continue to support their **collaboration on the Global Alliance for Building and Construction (GABC)**.

Sustainable heating

Sweden and France will explore the possibility of enhancing collaboration on the development of sustainable heating and cooling systems. The Swedish Government has had longstanding focus on energy efficiency and sustainable heating and cooling and is keen to share its suppliers' experience and expertise with international partners. The aim of the initiative is to help accelerate, through dialogue between different stakeholders, the expansion of heat networks (district heating) by showcasing new ideas and technology, and developing closer collaboration between business and political stakeholders across France and Sweden.

2/ GREEN FINANCE FOR A CLIMATE-RESILIENT ECONOMY

France and Sweden already cooperate to develop financing tools to finance the transition towards low-carbon and climate-resilient economies. Other objectives of the cooperation include fulfilling the goals of the Paris Climate Agreement and developing an appropriate framework to allow companies and financial institutions to go green.

Sweden and France also work closely on the boards of the largest multilateral environmental and climate funds, such as the Green Climate Fund and the Global Environment Fund. Sweden and France both have an important leadership role to play in ensuring ambitious replenishment in both funds.

This strategic partnership provides a unique opportunity to build on these achievements to further increase our bilateral cooperation in the field of green finance, through the actions listed below.

Sharing best practice on green and sustainable finance

Sweden and France propose to join forces, at European and international level, to promote the implementation of best practices with regard to companies' disclosure of relevant information to enable financial institutions to efficiently assess, price and manage climate-related risks and opportunities. The Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures has provided a framework for non-financial firms, banks, insurance companies and other financial institutions to report on climate-related matters. France and Sweden regard the effective implementation of the TCFD recommendations as a key priority. France already adopted, in August 2015, Article 173 of the law on energy transition and green growth that contains such innovative measures with regard to corporate and financial institutions. Similar requirements were implemented for Swedish non-financial firms in 2016, are proposed for Swedish investment funds (UCITS and AIF) to enter into force on 1 January 2018 and will begin to apply for the public pension funds sometime during 2018. **France and Sweden will work together to promote the implementation of the recommendations at European and international level** and try to convince other countries to ensure that they undertake relevant disclosure and adapt their legislation accordingly.

More generally, France and Sweden will work together to support the development of green and sustainable finance in the EU. The ongoing work of the

EU High Level Expert Group on sustainable finance represents a unique opportunity to foster better finance in Europe, and both France and Sweden have already taken steps in this direction at national level. France has set up a number of voluntary measures to promote green finance, such as dedicated green and Sustainable and Responsible Investment (SRI) labels, and by issuing a benchmark green sovereign bond (7 billion euro for 22-year bonds). Sweden has also announced a dedicated inquiry into the development of the green bond market.

Preparing the 2017 Climate Summit meeting

Sweden and France propose to have an exchange of substance on the preparation of the Climate Summit on 12 December in Paris. The following activities are proposed:

- Building on the experience of previous cooperation on an international scale, Sweden and France could explore how to move forward in engaging with other stakeholders to mobilise climate financing at scale, for instance by showcasing inspiring examples. During the UN General Assembly, Sweden and France co-hosted an event on mobilising climate financing at scale ('From billions to trillions'), highlighting, among many other examples, the successful cooperation between Swedish pension funds and French investors in shifting their investment portfolios to a more sustainable direction.
- Ministerial visits in both countries could provide opportunities for in-depth discussion at political and official level on preparation for and follow-up of the Climate Summit and on possible joint announcements.
- France and Sweden could also have an exchange with relevant stakeholders on preparation of the Climate Finance Day, which will take place in Paris on 11 December, to take stock of the latest developments in green finance.

Dialogue on how financial actors take climate change into account

Develop and structure the dialogue between relevant public authorities in both countries on how financial actors should take into account climate change, including concerning supervision and regulatory measures. An *ad hoc* seminar dedicated to this theme could be organised in Paris in 2018 by the French Treasury and Central Bank. This could be a good platform for steering EU-related work in

the desired direction. A concrete example would be the ongoing review of the ESAs where their role in sustainable finance is one of many issues.

Exchanges on green finance development

Engage relevant market stakeholders in both countries to explore together the best ways to develop green finance. Both countries have the opportunity to remain engaged and actively promote the international momentum on green finance development with focus on shifting global financial flows to the Sustainable Development Goals.

3/ DIGITAL TRANSFORMATION, SMART INDUSTRY AND START-UPS

Sweden and France are currently home to world-leading companies within automation, robotics, space, strong basic industries, IT and telecommunications, High Performance Computing (HPC), and innovative start-ups at the forefront of digital transformation. Digital transformation opens up digital opportunities for people and business and enhances Europe's position as a world leader in the digital economy. The EU Digital Single Market Strategy means that European companies are able to create jobs, sustainable growth and support new business models. To meet future needs and maintain the EU's competitiveness, joint initiatives are needed in research, innovation and entrepreneurship, as well as improved conditions for the industry transformation. By combining the deep competence in the European research system with the innovative power of the French and Swedish start-up ecosystems and development linked to 5G, we can take on global competition and take a lead in the necessary transformation towards a sustainable society. In the context of this partnership, the Eureka framework can also be used to foster competitiveness through innovation-driven entrepreneurship and cooperation between French and Swedish small and large industry, research institutes and universities.

Exchanges on artificial intelligence

Both Sweden and France have identified artificial intelligence (AI) as a key digital technology that will be an essential enabler for future innovation and productivity gains in industry and society. In the spring of 2018, an exchange could be started between relevant research institutes and universities with relevant profiles, forming a basis for faster development and implementation of this new technology.

Exchanges on space innovation

Both countries acknowledge that **earth observation from space is of utmost importance to monitor climate change**. The long-standing cooperation between France and Sweden in the field of research and development for space technologies, including earth observation, launch vehicles, and the use of the Esrange infrastructure in northern Sweden, have benefited sustainable industry and society. Exchanges at official level could be organised to further this cooperation.

Joint start-up week

The relationships between the 'French Tech' ecosystem and the Swedish start-up innovation system should be reinforced. With this objective in mind, **a 'start-up week', that would include start-ups and investors, will be jointly organised in 2018 by French and Swedish stakeholders.**

Exchanges of views on start-up programmes

Synergies between French and Swedish start-up ecosystems could also be reinforced through deeper cooperation and knowledge exchange between French and Swedish start-up exchange programmes. **A first bilateral exchange of views on these programmes could be initiated during 2018.**

Knowledge exchanges on digital transformation in SMEs

Our countries will establish a partnership and launch a knowledge exchange, committing to explore ways to support digital transformation processes in SMEs in all economic sectors. The partnership will bring together existing policy measures and be combined with a new bilateral dimension. A first exchange of views could be set up as early as in spring 2018 to identify best practices in each country's programme on digital transformation of SMEs.

Exchanges in the field of research infrastructure

Both Sweden and France host large-scale research infrastructures such as ILL, ESRF and ESS, and could join forces in the common interest of achieving long-term sustainability of European research infrastructures. **Exchanges could be organised between France and Sweden to examine how to take advantage of the research infrastructures that are hosted in both countries (e.g. ESS, MaxIV, SOLEIL, ILL) in the field of polymers and materials.** Further cooperation between research teams in life sciences and materials sciences, including an exchange of researchers, could be sought. Also, business partners, including industry and SMEs, will be encouraged to work together to explore business opportunities provided by these research infrastructures.

Exchanges on energy storage and utilisation of material physics research are also proposed. These exchanges could focus on applications of energy transformation, e.g. solar energy to hydrogen production, energy transportation (HVDC) and energy storage (e.g. next-generation batteries). A link to the strong research clusters at and around the French and Swedish research infrastructures is essential.

Further, initiatives on lightweight materials that reduce energy needs related to transport and handling could also be an area for exchanges between France and Sweden. The Swedish innovation partnership programmes in this area, as well as the research infrastructures Max IV and Soleil, may be important stakeholders in this cooperation.

Exchanges on disruptive innovation

Disruptive innovation can definitely be a game changer for our industries and economies. Sharing our success stories and best practices in this field, France and Sweden, as well as relevant stakeholders, will explore the best ways to nurture and foster disruptive innovation, both at national and European level.

4/ HEALTH AND LIFE SCIENCES INNOVATION

Health and life sciences are key priorities for both Sweden and France, and are perceived by both countries as strategically important for our citizens and our industries. Health systems are in constant need of re-assessment and reform, and it is useful to have an exchange on health care models in our respective countries. Our citizens long for healthy living and active ageing. Therefore, innovation advances in the fields of health, wellbeing, prevention through innovative medicine, medical devices, diagnostics, e-health, tele-health, nutrition and microbiome, environmental medicine, etc. rely on life sciences industries (from start-ups to established companies) to provide prevention, treatment and monitoring solutions.

These innovative solutions should rely on a common foundation in evaluating their various impacts and values for citizens, for the health system's efficiency and sustainability and for life sciences' economics.

Exchanges on digital transformation of health and life sciences

Digital transformation of health and life sciences has great potential to develop not only a patient-centred healthcare system, but also to improve the efficiency and financial sustainability of our social security models. **Experience exchanges on best practice could be organised between France and Sweden**, for instance in connection with personalised medicine, tele-health and e-health, the European legal framework regarding data and its consequences in the area of health care, new organisational models followed by the implementation of innovative solutions, market access for innovative solutions, and how to best benefit from the development of personalised medicine.

Strategic cooperation in JPI AMR and EU-JAMRAI

In the field of prevention and optimised treatments, **fighting antimicrobial resistance** (AMR) is also a major challenge for our societies, as regularly stated by WHO and the European Union. The EU implements a Joint Programming Initiative (JPI) on Antimicrobial resistance and a European Joint Action on Antimicrobial Resistance and Healthcare associated Infections (EU-JAMRAI).

France and Sweden are both involved in these initiatives and will have an exchange, under this framework, on the **best ways to develop a One Health approach to fight antimicrobial resistance**. France and Sweden will also contribute

to reinforce and align the many international initiatives on AMR with an aim to achieve concrete results.

Development of characterisation methods for endocrine disruptors

The subject of endocrine disruptors is declared to be of common interest, and both countries agree to work together to develop characterisation methods for endocrine disruptors.