Overview / summary of the initiative

**Title:** Third Industrial Revolution in Luxembourg (French: Troisième révolution industrielle au Luxembourg)

**Country:** Grand Duchy of Luxembourg

**Thematic area:** Energy, Transport, Health, Circular economy and re-industrialisation, Food and bio-economy, Climate change & low-carbon transition (Security)

**Objective(s):** To foster a systemic shift in economy and society, so that Luxembourg become one of the most sustainable countries over the next 35 to 40 years.

**Timeline:** 2016-2050

**Scale of the initiative:** No budget information available

**Scope of the initiative**

- Focused on new knowledge creation (basic research, TRLs 1-4): Yes
- Focused on knowledge application (applied research, TRLs 5-9): Yes

**Source of funding:** Public and Private

**Granularity of the initiative (initiative, policy approach):** Policy

**Source (webpage)** http://www.troisiemerevolutionindustrielle.lu/

**Brief description of the initiative:**

In September 2015, the Luxembourg Government, the Chamber of Commerce and IMS Luxembourg jointly embarked on a strategic study entitled “The Third Industrial Revolution Strategy”, in close collaboration with the US economist Jeremy Rifkin and a pool of experts. The overall objective of this initiative is to transform the economy and society of the Grand-Duchy between now and 2050.

Following the completion of the study in November 2016, the Government produced a strategic study and general guidelines for future development of the country and decided to transpose a certain number of specific projects through the use of new or existing platforms. These initiatives focus on nine main areas: energy, mobility, building, food, industry, finance, smart economy, circular economy, prosumers and social model. For each of these, a strategy – highly complementary to those of the other areas – has been designed. In 2017, several measures have started to be implemented.

The TIR strategy leverages on Rifkin’s thesis of a Third Industrial Revolution based on “Internet of Things” (IoT), i.e. a complete digitalisation in three domains: communications, energy and transportation.

I: Background, origin, mission and ambition

**Ia: Origin**

Jeremy Rifkin developed the concept of Third Industrial Revolution (2011), based on the idea that, after the First Industrial Revolution in the 19th century (which pivoted on steam-powered printing and the telegraph, abundant coal, and locomotives on national rail systems) and the Second Industrial Revolution in the 20th Century (leveraging on centralized electricity, the telephone, radio and television, cheap oil, and internal combustion vehicles on national road system), our society can embrace a systemic shift towards sustainability and set the basis of a Third Industrial Revolution.

Prior to the release of Luxembourg’s Third Industrial Revolution, the concept has been implemented in other locations including the French Nord-Pas-de-Calais region (Hauts-de-France since 2016) from 2012, where it has been part of a national push for a transition to clean and renewable energy and for a new model of development, and in the metropolitan region of Rotterdam-The Hague in the Netherlands.

In 2015, the Luxembourg Minister for Economics announced having entrusted a prospective mission to Jeremy Rifkin to release “a new economic model for Luxembourg”.

The government launched a vast consultation, which lasted 10 months and saw more than 300 socio-economic actors from government, the business community, academia, and civil society actively participating in the design of solutions and a concrete masterplan. Based on the deep collaboration between the Working Groups set up by the Government of Luxembourg and with the collaboration of the consultants of the TIR Consulting Group LLC, the TIR Study was finally completed.

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1 TIR Consulting Group’s global team is comprised of leading Third Industrial Revolution companies and consulting organizations in the fields of energy efficiency, renewable energy technologies, construction, advanced fabrication manufacturing, engineering, urban planning, architecture, real estate, information & communication technologies, power and utilities, and transport and logistics.
In November 2016, the Ministry of the Economy, the Chamber of Commerce and IMS Luxembourg jointly released the strategic study “The Third Industrial Revolution Strategy”. The Strategy aims to prepare Luxembourg’s economy and society for the upcoming megatrends and inherent disruptive forces – notably digitalisation, automation, decarbonisation, and efficient resource use – as well as for the new economic models, including the circular economy and the sharing economy.

<table>
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<tr>
<th>Ib: Initiator</th>
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<tbody>
<tr>
<td>• The Ministry of the Economy</td>
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<td>• The Chamber of Commerce</td>
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<td>• IMS Luxembourg (no-profit organisation, Luxembourg leader organisation in CSR strategies)</td>
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<th>Ic: Mission and ambition</th>
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<tr>
<td>The mission of the TIR Strategy is to prepare Luxembourg’s economy and society for the upcoming megatrends and inherent disruptive forces – notably digitalisation, automation, decarbonisation, and efficient resource use – as well as for the new economic models, including the circular economy and the sharing economy. It is essential that the country anticipates the changes in technology, environment and job market and takes preventive action to ensure the nation’s future competitiveness.</td>
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The long-term goals are to:

- Produce strong structural changes on the labour market, thanks to the creation of new jobs in the sectors in charge of building up the necessary infrastructures for the Internet of Things (IoT) (ICT, telecom, consumer electronics, electricity, power generation and distribution, logistics, etc.);
- Trigger change into existing firms, as the economy will shift to a new hybrid system, a mix of a capitalist and a sharing economy;
- Change the mentality of all the participants in the economy, in terms of cooperation and sharing economy schemes;
- Use more efficiently the resources (especially in terms of energy and food);
- Have a lower impact on global warming.

Dedicated working groups identified vision and sometimes specific objectives in each of the nine following themes:

1. Energy (e.g. a fully sustainable energy supply by 2050);
2. Mobility (e.g. 100% of passenger car electric by 2050);
3. Building: Smart, green and circular building in an optimal shared and attractive district;
4. Food: a safe, high-quality, transparent and sustainable food sector;
5. Industry: internationally recognized platform for sustainable industrial excellence through innovative solutions;
6. Finance: sustainable, world-class financial hub at the vanguard of the digital revolution;
7. Smart economy, i.e. competitive and resources-efficient, digitally inclusive and sustainable;
8. Circular economy: first country where the standard business model conceives products as services;
9. Prosumers and social model aimed at engaging further citizens in the Third Industrial Revolution and at mitigating the side effects that they might experience.

In the short term, the Luxembourg government set the nine priority measures:

1. Construction of a national energy internet;
2. Promotion of electro-mobility and launch of a programme for emission-free personal vehicles;
3. Progressive introduction of “mobility as a service”, a sustainable mobility ecosystem in which citizens use a multimodal approach and choose a combination of modes of transport best suited to their daily needs;
4. Implementation of a flagship project to demonstrate the socio-economic contribution of smart, sustainable and circular neighbourhoods / cities;
5. Establishment of a roadmap for sustainable food production based on transparency and confidence;
6. Development of technology platforms for industry and public research;
7. Establishment of an intermediary financing platform for sustainable development called the “Luxembourg Sustainable Development Finance Platform”;
8. Implementation of an infrastructure offering the required capabilities in the field of High Performance Computing (HPC);
9. Promotion of the circular economy through public procurement.

<table>
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<tr>
<th>Id: Decision making process</th>
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<tr>
<td>The TIR strategic study is the result of the work of heterogeneous working groups. 300 socio-economic actors from public administration (including the Government), the business sector, academia, and civil society actively participated in the proceedings and in the preparation of the final Strategy Study and accompanying proposals. During the ten-month consultation period, the working groups formulated mission statements and outlined strategies.</td>
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The TIR Consulting Group LLC is currently working with the Metropolitan Region of Rotterdam and The Hague, the Grand Duchy of Luxembourg, and the French Hauts-de-France region.
The overall objectives are not quantitatively measurable, but some have been translated in quantitative goals.

Roadmaps for the implementation of the Third Industrial Revolution strategy are designed based on consultations with stakeholders and manager by dedicated thematic platforms.

### Ie: Linkage to other governance levels
- **International level**
  - Sustainable Development Goals (SDGs)
- **European Union**
  - Linkage to the ‘Smart Europe’ plan, aiming to make the EU economy particularly high-tech, smart, green and digital, and Europe the most productive commercial space and the most ecologically sustainable society in the world;
  - The participation in EU Horizon 2020 projects (especially the lighthouse projects) is promoted and encouraged, as they may contribute to the achievement of the objectives set in the Third Industrial Revolution Strategy.
- **National initiatives**
  - "Digital Lëtzebuerg" initiative: under the guidance of the Ministry of the Economy, the TIR Strategy is developed with close ties with the "Digital Lëtzebuerg" initiative as well as representatives of the social partners, will ensure the overall coordination of the process post-Rifkin.

### If: Geographical scope
The TRI masterplan programme aims to move the whole country to a greener and smarter economy: all the regions of the Grand-Duchy of Luxembourg will take part in the initiative.

### Ig: Time span
2016-2050.

**Milestones up to December 2017:**
- Sep. 2015 – May. 2015: gathering of information
- May. 2016 – Sep. 2016: finalisation of the TIR strategic study (launched during a three-day Executive Seminar)
- Sep. 2016: publication of the strategic study and strategy development
- Nov. 2016: presentation of the strategic study at the Luxembourg Sustainability Forum 2016
- Nov. 2017: the Minister for Economy presented the interim report on the work initiated in connection with the development of the TIR Strategy.

### II: Formation

#### IIa: Driving forces
The Ministry of the Economy, the Chamber of Commerce and IMS Luxembourg (a network of national companies active in the field of Corporate Social Responsibility) launched the Third Industrial Revolution initiative with a view to establish a more sustainable economic strategy. It is based on the concept developed by the economist, Jeremy Rifkin, and already in process of implementation in other European locations.

Luxembourg is exposed to upcoming worldwide megatrends (e.g. digitalisation, circular and sharing economy, automation etc.), which are likely to have disruptive socio-economic effects. A new economic paradigm is emerging in the context of a major economic crisis (decline of productivity and economic growth, and unemployment increase) and climate change. The Strategy should raise Luxembourg’s awareness of these megatrends. Luxembourg alone can hardly influence them, but it must anticipate the changes they imply and transform related threats into opportunities. Furthermore, the Strategy should accelerate the transition of the Luxembourg socio-economic model away from an economic growth driven by increase in the labour force and resource-intensive consumption, towards qualitative growth relying on technological advancement for productivity gains and better management of resources, and for tackling societal challenges.

#### IIb: Approach
The government of the Grand Duchy of Luxembourg took on a new role as a facilitator of the process, replacing traditional top-down governance with lateral bottom-up approach, actively involving national stakeholders who provided their know-how, ideas, views, experiences and visions in order to bring multiple perspectives into the process. More than 300 socio-economic actors from government, the business sector, academia, and civil society actively participated in the proceedings and in the preparation of the final Strategy Study and accompanying proposals. The cross-functional participation was organized in nine working groups comprised of six vertical pillars that dealt with the sectorial topics of energy, mobility, buildings, food, industry, and finance and three horizontal axes that covered the transversal areas of the smart economy, circular economy, and the prosumers and social model.

#### IIc: Citizen involvement
*What about citizen involvement/participation/communication (who and how)?*
- In the development of the TRI strategic masterplan, representatives from the business community, academia, and civil society have actively participated in setting priorities and conceiving project proposals.
In the first implementation phase, citizens and stakeholders’ representatives have been involved in the decision process e.g. via the consultations conducted by the thematic groups and the People’s Vote Project. The latter project was organized by IMS Luxembourg and the Chamber of Commerce of Luxembourg in partnership with the Ministry of the Economy in November 2017. It consists in the selection, by the audience, of the best practices among shortlisted projects put into place by companies in Luxembourg in each of the six following categories: Energy, Mobility, Building, Food, Industry and Finance. Other similar events will be organized in the upcoming years.

The Strategy aims to turn Luxembourg citizens into “prosumers” who, connected to the Internet of Things, will produce and exchange with one another, for nearly free, and be at the edge of one of the most widespread developments of Sharing Economy models.

### III: Technical and political feasibility

#### IIIa: Technical feasibility assessment

The definition of the visions for the Third Industrial Revolution was made by thematic working groups involving a wide range of stakeholders who provided insights based on their own knowledge, experience and ideas. For each of the nine selected themes, the state of play was investigated, and a summary thereof was made in the final strategy report. Conceived as a strategic document, the objective was not to assess individual technologies and their respective appropriateness to achieve specific objectives, but to understand ongoing trends (including the technological state-of-the-art) in order to define feasible and consistent missions.

For the economic assessment (prior to the Luxembourg TIR master planning process) the Government used the Dynamic Energy Efficiency Policy Evaluation Routine (DEEPER). The model is a compact 15-sector dynamic input-output model of a given regional or national economy. The model is essentially a recipe that shows how different sectors of the economy are expected to buy and sell to each other, and how they might, in turn, be affected by changed investment and spending patterns. The model built on an assumed reference case over the period 2015 through 2050 as reflected in a variety of data published by STATEC, the European Commission, the Organisation for Economic Co-operation and Development (OECD), and the International Energy Agency (IEA), among other organizations and universities.

#### IIIb: Ex ante technical and risk assessment

Preliminary inputs from STATEC (national static agency), as well as key high-level reference case data, provided a useful starting point to make a number of economic performance projections through the year 2050. The preparation of the TIR Strategy additionally elaborated on major international studies on increased efficiencies and productivity, new business models, and employment opportunities brought by the shift to an Internet of Things smart economy.

According to ex ante governmental Cost-Benefit Analysis, benefits for the Luxembourg economy will be significant. By greatly accelerating energy efficiency in all sectors, it will enable the country, by 2050, to be fully powered by renewable energy technologies. Furthermore, the building of a new innovative digital infrastructure will contribute to strengthening the Luxembourg economy and to increasing its competitiveness.

#### IIIc: Success factors

Three main success factors can be identified:

- **Cross-disciplinary approach** to the future development of Luxembourg, combining social, cultural, and environmental narratives and economic theory and business practices, with the goal of reconceiving economic development within a larger frame of “quality of life”. In contrast with the original theories behind the Third Industrial Revolution, which focused almost exclusively on new technologies, products, and services, Luxembourg also aims to foster interconnectivity and protect the environment.

- **Internet of Things (IoT)** is a main feature of the TIR: the masterplan plans to converge with the digitalized facilities to run in a smart way energy grids and transport and logistics systems, with the support of the Internet communication.

- **Foster interconnectivity and private user’s experience**, by embedding sensors and actuators into private and public devices and appliances, allowing them to communicate with each other and Internet users, by creating a national distributed intelligent network to better employ resources and control consumption.

#### IIId: Incentives

*What type of incentives, processes and resources were/are used for engaging stakeholders (including private sector and citizen participation / societal involvement)?*

IMS Luxembourg (national leader organisation in CSR) leveraged on its wide network of firms to involve key stakeholders.

#### IIIe: Political and societal assessment

The consultation for the definition of the visions for the Third Industrial Revolution involved representatives of public administrations (including the national government) and of the civil society. Furthermore, associations were invited to react to the Strategy following the released of its report and their expressed opinions were compiled in the 2017 Interim Monitoring Report. Even though they express overall satisfaction with and appraise the process through which the
The Luxembourg Third Industrial Revolution was initiated by the national Government and two private sector organisations: the national Chamber of Commerce and IMS Luxembourg, which is a network of private companies active in the field of social corporate responsibility. Furthermore, representatives of the private sector have been involved in the Third Industrial Revolution Strategy since its initial phase, that is, its design, via the dedicated working groups. They are similar to the working groups that contribute to the design of the overall strategy: they consult representatives of public administrations, business sectors (including trade unions), finance sector, academic and civil organisations during dedicated meetings. These consultations aim to define the roadmaps for the implementation of the Strategy.

### IVa: Governance
The national Government designed a governance system dedicated to the implementation of the visions and recommendations included in the Third Industrial Revolution strategy report. It consists of eight thematic platforms: (1) the National Council for Sustainable Building (including the Buildings of the Future and Renovation Strategy working groups); (2) Energy of the Future; (3) the High-level Group for TIR Industry; (4) Circular Economy; (5) Mobility; (6) Luxembourg Sustainable Development Finance Platform; (7) Sustainable Strengthening of Agriculture; (8) Labour, Job and Social Issues.

The composition of these thematic platforms depends on their topics, but they all involve representatives of the public and private sectors and function like the working groups that contribute to the design of the overall strategy: they consult representatives of public administrations, business sectors (including trade unions), finance sector, academic and civil organisation during dedicated meetings. These consultations aim to define the roadmaps for the implementation of the Strategy.

### IVb: Progress monitoring
A Strategic Monitoring Committee was established following the release of the Strategy. It is composed of representatives of relevant ministries, employers’ organisations, trade unions, professional associations, and civil society, and is headed by the Minister of Economy.

An intermediary monitoring report was published in 2017 describing initiatives implemented in the direction of the Third Industrial Revolution strategy since its release, and opening a discussion on them.

### IVc: Public-private involvement
The Luxembourg Third Industrial Revolution was initiated by the national Government and two private sector organisations: the national Chamber of Commerce and IMS Luxembourg, which is a network of private companies active in the field of social corporate responsibility. Furthermore, representatives of the private sector have been involved in the Third Industrial Revolution Strategy from its initial phase, that is, its design, via the dedicated working groups. They are similar to the working groups that contribute to the design of the thematic platforms established, after the release of the Report, to identify steps for its implementation.

### IVd: Communication and dissemination
The communication on the Luxembourg Third Industrial Revolution strategy is made via the following means:
- Websites (governmental, the official TIR website);
- Public conferences (e.g. Luxembourg Sustainability Forum);
- Publications (e.g. the Sustainability magazine);
- Press conferences and interviews with national newspapers and sectorial magazines.

### V: Resources and budget needs/availability

#### Va: Scale
The Third Industrial Revolution strategy report does not include any information on the size of the budget that would be dedicated to its implementation. Data and metrics were reported to be indeed missing to determine the scale of the needed stimulus.

#### Vb: Funding sources
As the Third Industrial Revolution strategy sets the overall direction for the transformation of the domestic economy, it does not identify with a high level of details the funding sources that will be mobilised. However, the working group on finance, during the strategy design phase, called for the establishment of a Luxembourg Sustainable Development Finance Platform. The Platform, set up as a private-public partnership, would act as a broker between investors and project promoters without replacing existing (public and private) funding organisation. The Strategy additionally identifies micro-finance as an appropriate means to be further encouraged for funding (bottom-up, innovative and sustainable) projects that will contribute to the Luxembourg Third Industrial Revolution.

#### Vc: Allocation of the budget

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<table>
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<tr>
<th>IIIa: Interim political and societal assessment</th>
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<tr>
<td>There has not been any cabinet reshuffle since the inception of the Strategy, which has been furthermore commissioned by Ministers still in office.</td>
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Subsequent to the release of the Strategy report, associations (the High Council for Sustainable Development CSDD, Caritas Luxembourg, the Ecological Movement, the Associations of Luxembourg Students Clubs ACEL, and the Youth Parliament) were asked to reflect on the process through which the Strategy was designed and on its conclusions and recommendations.

<table>
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<th>IIIb: Financial risk assessment</th>
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<tr>
<td>At the time of release of the Strategy, it was stated that data and metrics were still missing to determine the scale of the stimulus that would be needed to achieve the targeted challenges. However, the strategy was designed, and its visions were decided based on economic modelling and scenario building.</td>
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<th>IV: Governance: organisation, management and coordination</th>
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| **IVb: Progress monitoring** |
| A Strategic Monitoring Committee was established following the release of the Strategy. It is composed of representatives of relevant ministries, employers’ organisations, trade unions, professional associations, and civil society, and is headed by the Minister of Economy. |
| An intermediary monitoring report was published in 2017 describing initiatives implemented in the direction of the Third Industrial Revolution strategy since its release, and opening a discussion on them. |

| **IVc: Public-private involvement** |
| The Luxembourg Third Industrial Revolution was initiated by the national Government and two private sector organisations: the national Chamber of Commerce and IMS Luxembourg, which is a network of private companies active in the field of social corporate responsibility. Furthermore, representatives of the private sector have been involved in the Third Industrial Revolution Strategy from its initial phase, that is, its design, via the dedicated working groups. They are similar to the working groups that contribute to the design of the thematic platforms established, after the release of the Report, to identify steps for its implementation. |

| **IVd: Communication and dissemination** |
| The communication on the Luxembourg Third Industrial Revolution strategy is made via the following means: |
| - Websites (governmental, the official TIR website); |
| - Public conferences (e.g. Luxembourg Sustainability Forum); |
| - Publications (e.g. the Sustainability magazine); |
| - Press conferences and interviews with national newspapers and sectorial magazines. |

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<th><strong>V: Resources and budget needs/availability</strong></th>
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<tr>
<td><strong>Va: Scale</strong></td>
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| **Vb: Funding sources** |
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<table>
<thead>
<tr>
<th><strong>Vc: Allocation of the budget</strong></th>
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</table>
The Third Industrial Revolution strategy report made publicly available does not include any information on how the budget, the size of which is not determined either, will be allocated.

VI: Policy mix and integral (‘holistic’) use to deploy mission-oriented R&I-initiatives

VIa: Policy mix
The elaboration of Luxembourg’s Third Industrial Revolution relied on the consultation of relevant stakeholders grouped in nine working groups. The working group dedicated to finance investigated and identified enablers of TIR projects and sources of finance. It recommended the establishment of the Luxembourg Sustainable Development Finance Platform aimed at easing access to financing by acting as an interface between (public and private) investors and individuals or organisations willing to launch projects in line with the UN Sustainable Development Goals and the Luxembourg Third Industrial Revolution.

During the phase of design of the Strategy, the working groups identified other instruments and policy interventions for the achievement of the set objectives. They mostly relate to: the design of specific strategies and roadmaps, the establishment of new governance structure, support to infrastructures development, adaptation of regulations, (demand- and supply-side) financial support including fiscal incentives, implementation of collaborative (online) platforms especially for accelerating data sharing, launch of R&D and demonstration projects, public procurement, changes in education curricula and training programmes, and awareness-raising and information sharing initiatives for changing citizens’ mindset.

VIb: Engagement of citizens
The citizens have been involved in the ten-month preparatory phase of the Third Industrial Revolution initiative for Luxembourg. More than 300 representatives of public administrations (including the Government), the business sector, academia, and civil society answered to the public consultation launched by the Government. The same participative approach was followed for the implementation of the Strategy: the thematic platforms consulted the same types of actors via dedicated meetings to elaborate concrete roadmaps in the direction of the Third Industrial Revolution for Luxembourg.

VII: Embeddedness of and connectivity with related initiatives (regional, national, supranational, global)

VIIa: Relationships/links/synergies to similar initiatives elsewhere
The Third Industrial Revolution strategy for Luxembourg is in synergy with national and international initiatives:
- Complementing and supporting EU-funded initiatives and strategies, e.g. Smart Europe initiative, Horizon 2020 projects;
- Mirroring other initiatives of Third Industrial Revolution, such as in France’s Nord-Pas-de-Calais region (Hauts-de-France since 2016), and in the metropolitan region of Rotterdam-The Hague, in the Netherlands.

VIIb: Links to UN Sustainable Development Goals
Luxembourg’s Third Industrial Revolution strategy is linked to the following UN Sustainable Development Goals:  
- Goal 3: Good Health and Well-Being
- Goal 4: Quality Education
- Goal 7: Affordable and Clean Energy
- Goal 8: Decent Work and Economic Growth
- Goal 9: Industry, Innovation and Infrastructure
- Goal 10: Reduced Inequalities
- Goal 11: Sustainable Cities and Communities
- Goal 12: Responsible Consumption and Production
- Goal 13: Climate change
- Goal 17: Partnerships for the Goals

VIII: SWOT analysis

VIIIa: Strengths
- The Third Industrial Revolution is a strategy setting visions for the long-term. This approach (combined to the political stability of Luxembourg) may encourage the commitment of relevant stakeholders in implementing the strategy.
- The broad objective of the strategy, that is, the transformation of the national economy, has been translated in different sectors, and priority actions have been identified. This should ensure consistency across actions taken in the different relevant sectors.
- The design of the Third Industrial Revolution and its implementation involved a wide array of stakeholders including citizens. The approach is appraised by consulted associations and representatives of the civil society.
- The implementation of the strategy is monitored by a dedicated committee and the actions taken during the first year after the release of the report have been the subject of a dedicated report that opened discussion in this respect.

2 http://imslux.lu/fra/nos-activites/pole-de-specialites/8_troisieme-revolution-industrielle-au-luxembourg
The implementation of Luxembourg’s Third Industrial Revolution may rely on good infrastructures (e.g. for logistics and in ICT) as well as know-how.

VIIIb: Weaknesses
- The visions set in the Third Industrial Revolution strategy report are barely translated into concrete goals (except a fully sustainable energy supply and a fully electric fleet by 2050).
- Lack of data and metrics to estimate properly the total costs induced by the Third Industrial Revolution.
- Representatives of the civil society (consulted after the release of the strategy report) are concerned that the strategy focuses, to a large extent, on economic aspects neglecting somehow the social aspects of the targeted socio-economic transformation.

VIIIc: Opportunities
- The significant population growth may maintain or even increase the need for new buildings stimulating further sustainable building.
- Luxembourg’s Third Industrial Revolution initiative may benefit from the ongoing similar experience in France and the Netherlands at the regional level.

VIIIe: Lessons learned
The Third Industrial Revolution is an umbrella initiative aimed at accelerating the transformation of Luxembourg’s economy and society (in line with concept of Third Industrial Revolution developed by the economist J. Rifkins), so that Luxembourg takes advantage of the ongoing megatrends, become one of the most sustainable economies, and contribute effectively to tackling the most pressing societal issues. This broad objective was translated in visions and sometimes concrete goals for six sectors and three transversal issues, ensuring thereby consistencies across different policy domains and actions being or to be undertaken.

The commitment of the relevant stakeholders was encouraged and eased through their involvement in the design of the strategy and of the subsequent roadmaps aimed at implementing it, as well as by the long timeframe of the initiative (coupled with the political stability of Luxembourg). Even though civil organisations are concerned that the social aspects of the Third Industrial Revolution are neglected, they appraised the open decision making process. However, the Strategy will need to be complemented with additional roadmaps for its successful implementation, as most instruments must be still identified and designed (except the Luxembourg Sustainable Development Finance Platform which is already under investigation). The challenge will be the coordination of these roadmaps in order to ensure the overall consistency of the initiative. The Luxembourg Third Industrial Initiative may therefore be considered as a mission-oriented research and innovation initiative shedding light on the challenges implied by large umbrella programmes.

The Third Industrial Revolution has the ambition to build on recently developed technologies (e.g. IoT, block chains) to accelerate the transformation of Luxembourg economy and society. The pitfall of such strategy may nevertheless be the lack of reliable data and metrics to assess the needs to stimulate properly this transformation, but also to measure related progress.