D.T.1.1.1 – Inventory of policy instruments

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This report is drafted as part of the Interreg Alpine Space Project AlpLinkBioEco. Within WP 1 of the project, an inventory is made of bio-based economy strategies and policy instruments in France and in particular in the French Region of Auvergne Rhone-Alps. The inventory of policies, clusters and actors provides an overview of the framework conditions, key actors and infrastructure affecting the ecosystem for the development of a bio-based and circular economy in Auvergne Rhone-Alps.

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Introduction

The vocation of the bio-economy is to sustainably satisfy the fundamental needs (food, housing, clothing, warming, moving, …) by the production, the transformation and the use of bio-resources supplied by nature and biomass.

The bio-economy constitutes a major lever for the energetic and ecological transition. In order to facilitate the bio-based economy development, France introduced its national strategy for bioeconomy. The French Strategy is coherent with the other national strategies in relation with bio-resources production, their mobilization, their use and the environmental issues: plan for vegetal protein, agro-ecological plan for France, national strategy for low carbon, national strategy for the mobilization of biomass and regional scheme for biomass, roadmap for circular economy, national strategy for bio-diversity,  4 for 1000 program, national program for wood and forest, national strategy for sea and littoral, …

The bio-based economy cannot develop without the territories. The action plan focusses on a framework and on national tools, able to help the development of the bio-based economy in the territories. The government can help territories to set up a local policy for bio-based economy, and to ensure the articulation between national and regional strategies.

Indeed, the Region Auvergne-Rhone Alps implements national strategies/plans at regional level, is developing and several regional strategies/plans linked to the bio-economy but has not yet a Regional Strategy on bioeconomy as such. Nevertheless, the Region is developing for the End of the Year a beta version of its Regional Scheme on Biomass and works on a Regional Plan for Circular Economy.

The region is ranked among the 4 first regions in France for biomass resources. Furthermore, in Auvergne Rhone Alps Regions, there are a significant number of clusters and enterprises that are making direct use of bio-based applications: packaging, textile industry, etc.
Current situation in the region

FUNDAMENTAL ECONOMIC FIGURES

Auvergne-Rhône-Alpes is one of the largest regions in the European Union, be in terms of surface, population and of the creation of wealth. With 7.7 million of inhabitants and the seventh biggest European GDP (Gross Domestic Product), Auvergne-Rhone-Alpes is among leading French regions in volume of industrial jobs. The tertiary sector, the construction sector, agriculture and tourism are the other main sectors in terms of jobs. It has major research centers at national level, 15 competitiveness clusters and 18 clusters. It is at the second French rank for the number of patents, and it provides an important potential of innovation.

Being at the same time exporter (third French region) and attractive (second region for foreign investment), it distinguishes itself by a strong dynamic of new business creation. It has numerous SMEs, among which most are a family business.¹

BIOMASS RESOURCES

Agriculture

Auvergne-Rhône-Alpes is the fourth French agricultural region in surface and the second region in surface for biological agriculture with 3.1 million ha. It has 116 000 farm assets, 62 500 agricultural holdings in which 35% of farmers are less than 40 years old. The agricultural activity is turned to the livestock sector, in particular milk, beef, pig. The plant sector is also noticeable with vegetables, fruits, vine, seed, and very specialized production like lentils or nuts. 28% of agricultural farms are committed to quality approach. More than 102 products have a label of quality (“Appellation d’Origine Contrôlée” or “Appellation d’Origine Protégée” in French). Finally, the region has a strong food-processing industry with 4 431 businesses, 40 377 jobs and a revenue of 7,7 billion euros, including 11% for export.

Forestry

The region presents important contrasts between the areas of plain, low mountain range and mountain; the latter being extremely difficult to exploit.

The region is the third French region in terms of forestry surface with 2.5 million ha. It has 20 200 companies which provide 62 700 jobs and a turnover of 6 billion euros, including 2 billion euros of added value. Auvergne-Rhône-Alpes Region yearly produces more than 16 million m³ of wood (rate of annual increase of 6,8m³/inhabitant/year, upper than the national rate of 5,8m³/ inhabitant/year). Furthermore, the annual regional wooden harvest represents 5,2 million of m³. Forest and wood are mainly used for wood construction and joinery, sawing and woodworking, energy, paper board industry and forestry development.

**Regional strengths and opportunities**

With Lyon as the birthplace of the French chemicals industry, Auvergne Rhone Alps is the first Region in France in chemical production with more than 500 companies and 32,500 employees in the fields of petrochemicals, mineral chemistry, analytics and organics. Fields which have a link with the chemicals industry, such as pharmacy and plastics manufacture, are also well represented. The whole value chain is present in the region, as are numerous R&D centres, specialised training institutions and competitive clusters such as AXELARA in the field of chemistry and environment and Plastipolis in the field of plastics. Many research projects and innovations have thus been developed in green chemistry and bioplastics in the Region.

Despite being the 3rd region in forestry in terms of forestry surface, the abundant regional forestry resource remains underexploited. Organic production, estimated at 15.7 Mm³ per year in hardwood volume. The levy represents only 40% of the production. The marketed harvest, about 5 Mm³ per year, is clearly dominated by timber, ahead of wood energy, then industrial wood. Better mobilization of the deposit can make it possible to develop widely the use of wood as energy, in accordance with the ambitious objectives of the multiannual energy program. The wood energy sector in ex-Rhône-Alpes:

In 2015, Rhône-Alpes companies sold 630,000 tons of shredded wood to supply the 3,600 boiler rooms with a capacity of 585 MW. 74 installations have a power greater than 1 MW. The overall consumption of all boiler plants is estimated at 730,000t of wood. There are 116 structures that market shredded wood. Auvergne-Rhône-Alpes is the leading producer of wood pellets with 300,000t produced in 2015.

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National and regional Strategies

The French strategy for bio-based economy

In order to facilitate the bio-based economy development, France introduced its strategy at the Council of Ministers in January 2017, which is based on various studies carried out by the Ministry of Agriculture, Environment, Economy and Research, and with various stakeholders. The French Strategy is coherent with the other national strategies in relation with bio-resources production, their mobilization, their use and the environmental issues : plan for vegetal protein, agro-ecological plan for France, national strategy for low carbon, national strategy for the mobilization of biomass and regional scheme for biomass, roadmap for circular economy, national strategy for bio-diversity, 4 for 1000 program, national program for wood and forest, national strategy for sea and littoral, …

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The strategy for bioeconomy of the the French Environment and Energy Management Agency (ADEME)

The French Environment and Energy Management Agency (ADEME) has developed its strategy for a sustainable bioeconomy for the period 2017-2022. For the Agency, the sustainable bioeconomy is a strategic lever for the ecological and energy transition. The field of action of the bioeconomy is very broad with various fields: agriculture, food, forestry, algae production, development of biobased products, bioenergy, biowaste ...

ADEME's strategy on this subject is articulated with the public policies of the Ministry of Ecology, the Ministry of Agriculture and Food and the Ministry of Research. It is structured around three axes: the sustainable management of soils, agricultural and forestry systems, the development of sustainable food systems, the support of sustainable biosourced sectors.

Regional scheme on biomass

In 2015, the Energy Transition for Green Growth Act defined the implementation of a national biomass strategy and regional schemes on biomass. The decree of 19 August 2016 specified its framework and determines the content of the national strategy for biomass, regional schemes and their methods of articulation.

The regional biomass scheme aims to develop the use of biomass to produce energy in respect of competing uses (food and materials) and taking into account economic impacts, environmental and social issues.

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4 http://agriculture.gouv.fr/telecharger/83595?token=4b2095fafe14f075309cc193dda53d70
7 https://www.legifrance.gouv.fr/affichTexteArticle.do;jsessionid=CAC3212D609EC6E64945B5B0F735037.tpdila11v_3?idArticle=JORFARTI000031045797&cidTexte=JORFTEXT000031044385&dateTexte=29990101&categorieLien=id
8 http://www.legifrance.gouv.fr/affichTexte.do;jsessionid=027A2E7970F771E4D2DE52C15209A939.tpdila20v_1?cidTexte=JORFTEXT000033052833&dateTexte=&oldAction=rechJO&categorieLien=id&idJO=JORFCONT000033052723
The three sources of biomass to consider are:
- of forest and similar origin (like hedges, alignment plantations ...),
- of agricultural or agri-food origin (animal dung, intermediate cultures between two main crops, waste from the agro-food industries ...)
- or from waste (biowaste, end-of-life wood, sludge treatment ...)

The challenge is to satisfy demand without competing with current uses.

The regional scheme on biomass, drawn up jointly by the State and the Regions, must set "guidelines" and plan "regional actions concerning the production and valorization of biomass sectors likely to have an energy use.

Thus, in Auvergne-Rhône-Alpes, the Regional Council and the State are jointly working on the development of this regional plan, which aims to mobilize more biomass and make the most of it. It includes an inventory of fixtures, particularly in terms of additional deposits that can be mobilized, but above all, it must lead to an action plan and a monitoring and evaluation phase.

The regional scheme is placed in different perspectives: 2018, 2023, 2035, 2050. The aim is to identify concrete measures that can have an impact on mobilization and demand. Governance and sharing with stakeholders was done through workshops. The first document was issued in 2017 (last update in June 2017) but a beta version is planned for the end of 2018.

**Regional Action Plan for Circular Economy (PRAEC)**

The law New Territorial Organization of the Republic ("law NOTRe" - August 7, 2015 and its Planning Decree of June 17, 2016), entrusted to the regions, the development of the Regional Plan of Prevention and Management of Waste (PRPGD). This PRPGD must also contain a Regional Plan for Circular Economy Actions (PRAEC), the first step in a strategy and a more global action plan for the circular economy. The circular economy covers all resources: primary materials (renewable and non-renewable) and secondary materials (waste) necessary for the development of our societies.

Plastipolis participates in a working group on plastics in the framework of this Regional Action Plan for Circular Economy.

The Regional Action Plan for Circular Economy could be finalized in 2019 but is still in progress.

**Regional Scheme of Economic Development of Innovation and Internationalization (2017-2021)**

This regional scheme articulates around three strategical axes:

- **Axis 1**: Reinforcing the global competitiveness of the companies and supporting their projects of development, and creation of employment.
- **Axis 2**: Making Auvergne-Rhone-Alpes a European champion due to its eight areas of excellence (future industry and industrial production, construction, digital, agriculture/food/forest, energy, intelligent transport system, sport/mountain/tourism, health,). An operational roadmap is drafted for each area of excellence.
- **Axis 3**: Creating synergies to accelerate investments in the territory.9

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9 [Link](https://www.auvergnerhonealpes.fr/cms_viewFile.php?idtf=301&path)
The plan mentions the importance of bioéconomy:

“The development of quality products resulting from organic farming is a lever for Auvergne-Rhône-Alps to become the main supplier of quality products and excellence on the whole food markets. Strengthening the sectors also contributes to this objective, whether it be territories based on specific productions, or regional channels. Agriculture in the region will have to also be able to innovate on new non-food markets (anaerobic digestion and other bioenergy, biomaterials, food-health). Consulting and training shall contribute to support the development of farms and sectors, control of their production costs and support for weakened by the crisis context.”

Regional strategies specifically linked to forestry

Various programs and regional plans exist in the Auvergne-Rhônes-Alpes region regarding forestry and the bio-based economy:

- Regional program for forest and wood (PRFB): sustainable management, protection and development of wood and forests as reforestation, the preservation of the genetic forest resources and biodiversity. 10
- Regional Scheme on Biomass: regarding the energy transition for the green growth, it plans the elaboration of a national strategy of Mobilization of the Biomass, articulated with a Biomass Regional Scheme11 (see above)
- Regional Multiannual Scheme for Forest Development.

Regional strategies specifically linked to agriculture

There are various regional policies for agriculture such as the Regional Projects for Sustainable Agriculture in Auvergne12 and the Regional Projects for Sustainable Agriculture in Rhône Alpes, the Agro Ecological Project and the Regional Committee for the Agricultural Economy and for the Rural World.13

Regional strategies specifically linked to waste and biowaste

There are various regional policies for waste14, such as the Regional Plan of Actions for Circular Economy with a working group about plastics processing industry allows to set up, and to carry out concrete and territorial actions (see above), the Regional Plan of Prevention and Waste Management15 and AURADECHET16 (program from ADEME about recycling, circular economy and waste in Auvergne-Rhône-Alpes).

Different other regional programs are available, such as Innov’R 17 to foster the emergence and the development of eco-innovative projects of the SMEs. This program is set up by the regional agency; the ECLAIRA network18 (about circular economy) and the club of the energetical transition in Auvergne-Rhône-Alpes.

12 http://draaf.auvergne-rhone-alpes.agriculture.gouv.fr/PRAD-Auvergne
16 https://appelsaprojets.ademe.fr/aap/AURADECHET2017-17
17 http://www.auvergnerhonealpes-entreprises.fr/innovr-soutient-vos-projets
18 https://www.eclair.org/static/le-reseau-eclair.html
Strategy implementation

Action plan of the National Strategy for Bioeconomy\(^{19}\)

The French National Strategy for Bioeconomy is implemented through a 3 -years action plan (2018-2019-2020). In 2018, the plan concentrated on the non-alimentary part of bio-economy. It does not address of food valuation of the biomass.

Fifty measures identify the economic and environmental potential and co-benefits of the bioeconomy, support projects (research and funding) and ensure a market for these products.

The first year of the action plan will concentrate on matchmaking events between producers of bio-resources and manufacturers. The objective is to enable manufacturers to better understand the resources they can transform and producers to better understand the technical requirements to value their products. The IAR competitiveness cluster, "the bioeconomy cluster"\(^ {20}\) is responsible for this measure. With 370 members, IAR already brings together the entire value chain, from the agricultural upstream to the marketing of finished products: agricultural cooperatives, research establishments and universities, companies of all sizes, public actors. Since 2005, IAR has supported more than 250 projects for a total investment of more than 1.7 billion euros. The Pole intends to continue on this path and sees in this government action plan "a new major step" to "strengthen the bioeconomy on the French territory."

In 2018, the government also raised awareness of investors (banks, insurers, investment funds) on this issue so that they integrate the bioeconomy into their strategies. The Ministries of Agriculture, Environment and Economy organized a meeting with these actors and BPI France. The bioeconomy has also been integrated into the innovation support systems, particularly the program of investments for the future. Priority will be given to production equipment, harvesting and processing biomass. A mapping of innovation support tools is carried out to ensure their complementarity.

For 2018, the action plan also provides for the publication of the decree on taking into account the biosourced nature of products in public procurement, provided for by the energy transition law. The government is also working on ways to facilitate the use of 100% biobased fuels in captive fleets.

The role of the French Environment and Energy Management Agency (ADEME)

The French Environment and Energy Management Agency (ADEME) participates in the implementation of the policies in the fields of environment, energy and sustainable development. In order to to make progress in their environmental approach, the agency provides companies, local authorities, public authorities and the general public, its expertise and advice. It helps in project financing, from research to implementation, in the following areas: waste management, soil conservation, energy efficiency and renewable energy, quality of air and the fight against noise. ADEME is a public institution under the Ministry of Ecology, Development, Sustainable Development and Energy and the Ministry of National Education, Higher Education and research.

As mentioned above, ADEME has developed its strategy for a sustainable bioeconomy for the period 2017-2022. To implement its strategic project in the sectors of agriculture, forest and their


\(^{20}\) https://www.iar-pole.com/
sectors, ADEME deploys different modes of action in the part of its missions attributed by the COP. The 3 missions of the ADEME awarded by the Contract of objectives and performance are:

- Accelerate the deployment of the transition
- Innovate and prepare for the future
- Contribute to collective expertise

Clusters and innovation in support of the diffusion of bioeconomy
Mapster online\(^{21}\), the directory of French clusters, realized by France Clusters, and the directory of clusters in Auvergne Rhone Alpes, realized by the Regions before their merge list more than 35 cluster initiatives in all sectors in the Region.\(^{22}\) From these initiatives, more than ten support or can play a key role for the transition towards a bioeconomy in various fields of action (non exhaustive list):

- Axlera (chemistry and environment)
- Céréales Vallées (agriculture)
- Elastopôle (rubber and polymers)
- Cluster Eco Energies
- cluster bio (organsics food)
- Terralia (agri and agrofood, plant technologies)
- Pole Eco Conception (energy)
- Plastipolis (plastics)\(^{23}\)
- Tenerrdis (energy)
- Techterra (technical textiles)
- Viameca (mechanics)

\(^{21}\) [http://france-clusters.clusterz.fr/annuaire](http://france-clusters.clusterz.fr/annuaire)


\(^{23}\) Plastipolis is partner of the AlpLinkBioEco project [https://www.alpinespace.eu/projects/alplinkbioeco/en/about/partners/project-partners](https://www.alpinespace.eu/projects/alplinkbioeco/en/about/partners/project-partners)
Future outlook

Action plan of the National Strategy for Bioeconomy during the coming years

For 2019, the action plan of the National Strategy for Bioeconomy includes a series of events and tools aimed at making biobased products known: bi-annual scientific symposium, communication campaign, creation of an online database of bio-based products (Agrobiobase), traveling exhibition, open house in the companies concerned ...

A "biobased product" label will be created. It will be based on the European standard CEN / TC / 411. A threshold per product family will be set, beyond which the product will be considered biobased. Supermarkets will also be used to promote these products.

By 2019, the government intends to carry out a prospective study focused on the blue bioeconomy, its potential and its environmental impacts: fishing, aquaculture, macro and micro-algae ...

It will also address the issue of Energy Intermediate Crops (CIVE). Unlike Germany, France wants to limit the use of food crops for the production of energy by methanisation. But it allows CIVE. In addition to their interest in land cover, intercropping is a complementary source of biomass. According to the action plan, the modalities of support for these intercultures can be examined as part of the reflections on the post-2020 CAP.

The 2020 deadline will be the analysis of these sectors and the necessary tools. Thus, the action plan provides for the strengthening of life cycle analysis methods for products and sectors of the bioeconomy by taking into account the environmental services rendered. These analyzes will be supplemented by work on environmental, societal and economic impacts and compared with the same methods to non-bio-based solutions. Similarly, the effect of the bioeconomy on the creation of added value in the agricultural sector will be evaluated.

Sustainability assessment guides for a project or sector will be published to ensure that biomass mobilization respects the preservation of biodiversity.

This will also be the time to build confidence and encourage downstream industries to use these biobased products by ensuring their insurability. Demonstration platforms, laboratories and feasibility studies can encourage manufacturers to test them and eventually adopt them.

"Bioeconomy Trophies"24

With the "Bioeconomy Trophies", the Ministry of Agriculture wishes to highlight recent and successful initiatives of non-food valorization of bioresources, responding to market needs. These trophies reward sector projects that value bioresources for different uses, which can replace fossil carbon solutions.

The competition takes place in two selection phases (applications must be submitted by the 16 November 2018), with the designation of a regional winner and then a national winner. The award will be presented at the international agricultural fair to be held in Paris in February 2019. An endowment of € 20,000 from Crédit Agricole is planned for the national laureate.

24 http://draaf.auvergne-rhone-alpes.agriculture.gouv.fr/Les-trophees-de-la-Bio-economie-la
The initiatives presented must contribute to the structuring of the sector and integrate the circular aspect (valorization of co-products, becoming of the product at the end of life, recycling, reuse). They may concern recovery sites located in different departments or regions.

Regional plans
The Regional Scheme on Biomass (SRB) and the Regional Action Plan for Circular Economy (PRAEC) currently under preparation shall finalized in the coming year.

Programmes of the French and Energy Agency (ADEME)
Since 2010, ADEME manages programme within the “National programme for Future Investments” (PIA). With 85 calls for projects launched by ADEME, 745 projects, of which 322 were carried by SMEs, were launched.
A new competition was published on July 19, 2018 and closed on October 9, 2018. The 4 themes covered by ADEME are (others are covered by Bpifrance and AgriMerFrance):

- Circular economy
- Environmental performance of buildings
- Eco-efficient Agriculture and Forestry Industry
- Chronic exposures and health risks

Up to now, the chemical industry, which is very strong in Auvergne Rhône Alps Region, is highly dependent on fossil resources for their production (plastic materials, cosmetics, fragrance, fertilizer, cleaner, …). The rarefaction of these resources, the variability of their costs and the geopolitical issues require to find substitution renewable raw materials, like biomass. The plant chemistry has a major role to play, on the one hand to contribute to reducing this dependence, and on the other hand for developing health aware and environment aware products.

For example, the national call ORPLAST supports the integration of recycled plastics in the products, in order to preserve resources. The scheme provides for cyclical support for the supply of recycled plastics and for structuring the sector. These include support for feasibility studies, integration testing of recycled plastics and investment support. Structural support accounts for almost 90% of aid. It is expected to increase the capacity of incorporation of recycled plastic by 80,000 tonnes within three years. Some projects “have the ambition to incorporate MPR in new applications, or even to integrate some recycled resins that do not know or few opportunities currently,” says Ademe.

In 2016: 68 projects have been financed (15 million euros), in 2017: 28 projects (6 million euros). The main user sectors in the plastics sector, including building and public works, packaging (traffic jams, films, etc.) and cars, are represented in the selected projects. In addition, "a complementary list of 15 projects has also been established, whose financing will be decided later, end 2018 or early 2019," says Ademe.

A third call for projects could be launched "in the coming years". Its opportunity will be studied after the contractualization of the files of the complementary list in 2019. "The state of the market will make it possible to define the contours [of this] eventual call for complementary projects".

26 https://www.ademe.fr/feuille-route-strategique-systemes-stockage-denergie
In addition, ADEME launches other calls about biomass and waste, such as the **call GRAINE ADEME for valorization of biomass**\(^{27}\).

The GRAINE call for research proposals supports research projects to enable the development of a bioeconomy in the service of the ecological and energy transition of territories. It is a question of articulating accompaniment of the production and valorization processes with the reduction of the environmental impacts and taking into account the services rendered by the ecosystems.

The biomasses targeted in this call are agricultural productions (vegetable and animal) and their co-products, forest and silvicultural productions and their co-products, organic waste, industrial co-products or algae and insects.

ADEME intends to help guide bioeconomy stakeholders by supporting the acquisition of knowledge, innovation, and the deployment of solutions.

**The use of wood energy is supported by the heat fund managed by ADEME and its calls for projects:**

- Plant for the production of heat from wood energy for biomass boilers with or without a heat network, producing more than 100 tops
- Creation, extension and densification of heat networks for heating networks.

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\(^{27}\) [https://www.ademe.fr/graine-gerer-produire-valoriser-biomasses](https://www.ademe.fr/graine-gerer-produire-valoriser-biomasses)
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