

Energy sector





A STRATEGIC POSITION IN EUROPE

With its business parks, infrastructure and business services, Bourgogne-Franche-Comté creates ideal conditions for the successful completion of your projects.

AN EASILY ACCESSIBLE REGION



POPULATION

2.8 MILLION INHABITANTS
42 MILLION INHABITANTS WITHIN 4 HOURS' DRIVE



EDUCATION

60,000 STUDENTS
30,000 YOUNG PEOPLE IN APPRENTICESHIP TRAINING



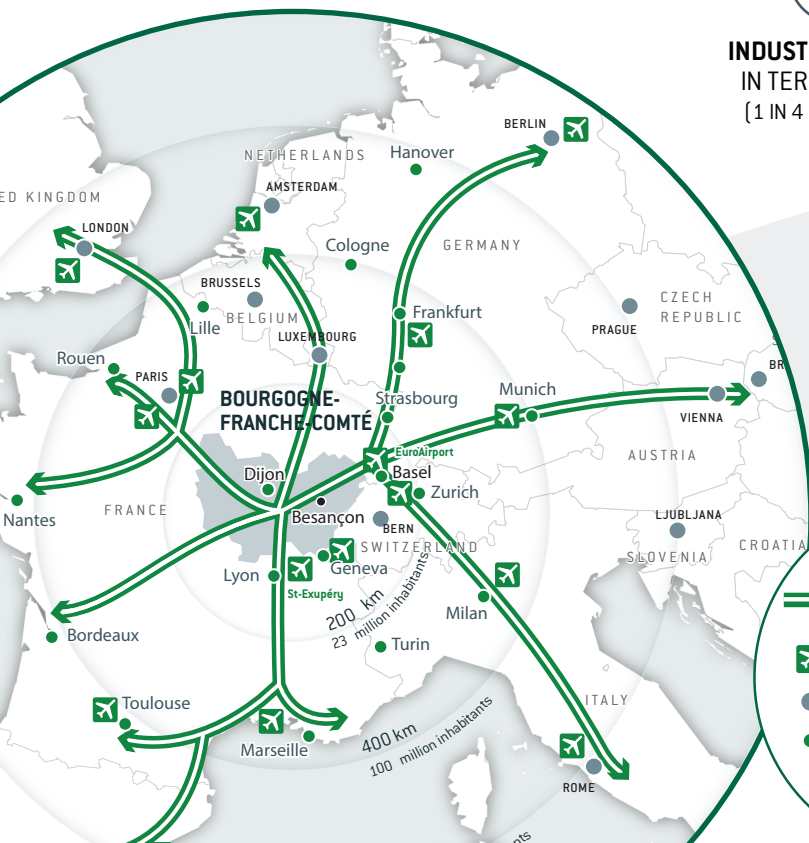
BUSINESSES

367,200 BUSINESSES
19,300 MANUFACTURING INDUSTRY ESTABLISHMENTS



JOBS

1.3 MILLION PEOPLE IN THE WORKFORCE



No.1
INDUSTRIAL REGION
IN TERMS OF JOBS
(1 IN 4 EMPLOYEES)

No.2
REGION FOR THE **SHARE OF INDUSTRIAL ADDED VALUE**

81.7
BILLION EUROS OF GDP AND €21.3 BILLION IN EXPORTS

3rd
LARGEST EXPORTING REGION
(COVERAGE RATES: EXPORTS/IMPORTS AS %)

No.1
INVESTMENT REGION
(PRIVATE INVESTMENT IN R&D)

- Major European motorways and high-speed railway lines
- International airports
- Capital cities
- Major cities

Reference data: figures known in 2023





REGIONAL SUPPORT FOR ENERGY INDUSTRIES

Bourgogne-Franche-Comté has exceptional heritage in terms of biodiversity and resources, and it is committed to the energy transition. Its goal is to become a positive energy region by 2050. To this end, and in addition to its long-standing steam boiler, nuclear reactor and turbine manufacturing activities, the Region is supporting an active ecosystem conducive to the sector's skill challenges and the development of carbon-free energy production projects.

THE REGION'S STRATEGIC FRAMEWORKS FOR ENERGY



Regional roadmap for the deployment of **renewable and recovered energy**



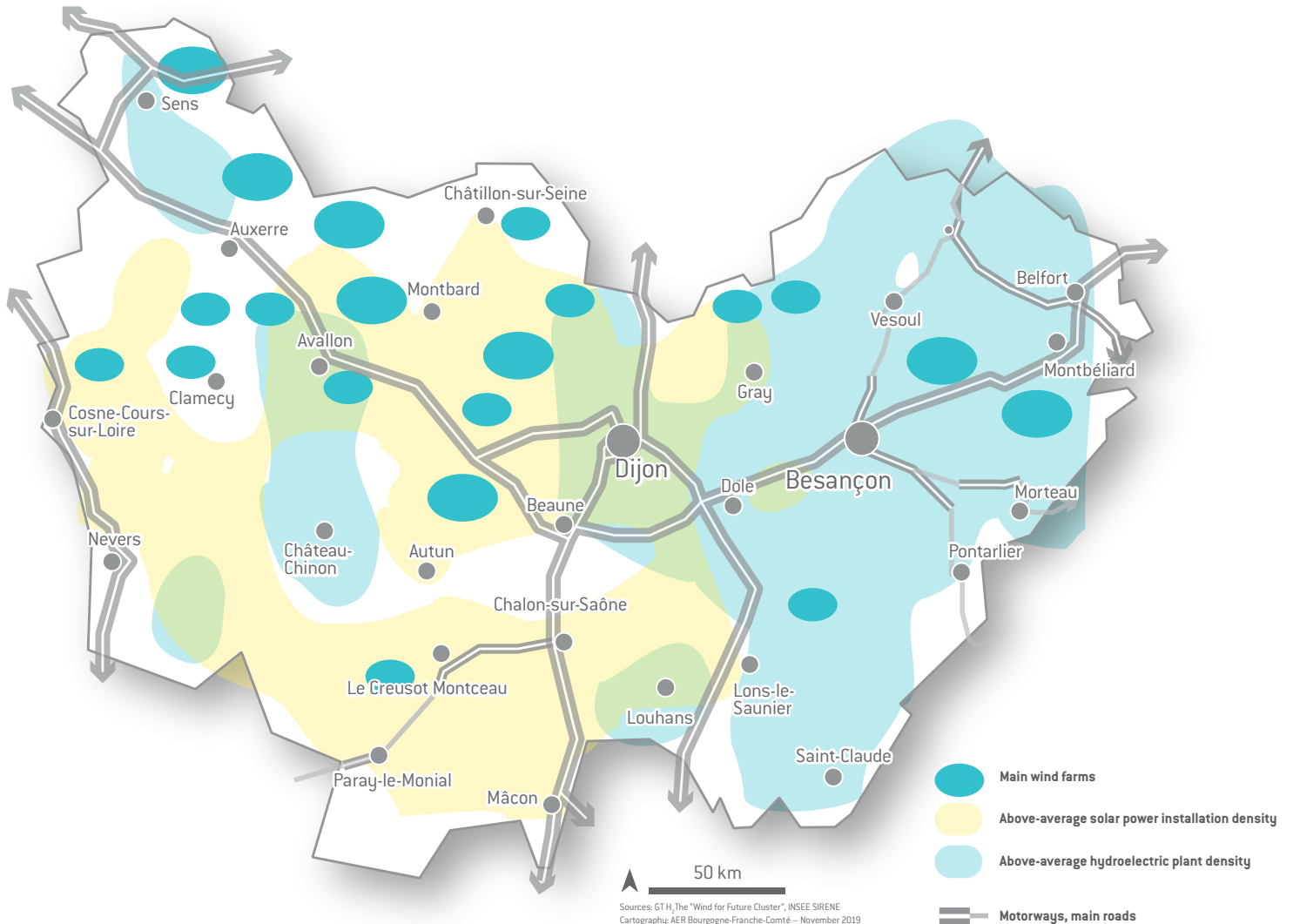
Support for clusters and competitiveness clusters



Action plan in conjunction with the University of Nuclear Professions (UMN) **to train 100,000 new employees** in Bourgogne-Franche-Comté **over the next 10 years**



€100 million between now and 2030 to support the **hydrogen sector**





OVERVIEW OF THE ECOSYSTEM

TRAINING COURSES

University of Franche-Comté

> From the BUT (university bachelor of technology) to master's level, 26 courses in renewable energies, hydrogen energy, electrical energy, thermal energy and energy efficiency, including a CMI in Hydrogen Energy and Energy Efficiency

Educational facility focused on energy and hydrogen

www.univ-fcomte.fr

UTBM (Belfort-Montbéliard)

> Energy production, transport and storage systems, on-board energy systems, hydrogen energy, mechanics, IT and electrical engineering

Educational platforms:
Electromagnetic compatibility
Energy & land transport

www.utbm.fr

University of Burgundy

> From the DUT (technical diploma) to master's level, courses in the physics of materials, in chemistry and in nuclear energy as well as civil and mechanical engineering

www.u-bourgogne.fr

University of Bourgogne Franche-Comté

> Graduate school EIPHI in the following fields: Physics, Mathematics, Intelligent Systems, Energy, Materials Science, IT

www.ubfc.fr

Arts et Métiers (Cluny)

> Materials, manufacturing processes, digital models and virtual imaging

Hosted laboratories:
LISPEN
LaBoMaP

artsetmetiers.fr

Polytech Dijon (formerly ESIREM)

> Materials, IT & Networks, Electronics & Digital Systems, Robotics

esirem.u-bourgogne.fr

IUT (Le Creusot)

> Physical measurements, electrical engineering and industrial IT, mechanical and production engineering, CAD/CAM, mechatronics, robotics, marketing techniques

iutlecreusot.u-bourgogne.fr

IUT (Chalon-sur-Saône)

> Non-Destructive Testing of Materials and Structures, Industrial Engineering and Maintenance, Logistics and Transport Management, Materials Science and Engineering

iutchalon.u-bourgogne.fr

SUPMICROTECH-ENSMM

(Besançon)

> Microtechnology, precision mechanics, mechatronics and microsystems, materials, manufacturing processes and surface treatments

www.supmicrotech.fr

GRETA (21)

> Senior wind turbine maintenance technician – BZEE

www.bourgogne-greta.fr

ANEMOS France

> Mandatory courses in wind energy

www.anemosfrance.com

VOCATIONAL DIPLOMAS, BTS

LYCÉE LÉON BLUM (Le Creusot)

> Vocational Diploma in Nuclear Installation Techniques (TIIN – Techniques d'Interventions sur Installations Nucléaires)
> Senior Technician's Diploma (BTS) – Nuclear Environment (ENU)

lyc-lblum-le-creusot.eclat-bfc.fr

LYCÉE GUSTAVE EIFFEL (Dijon)

> BTS – Systems Maintenance, wind power option
> Electrical network technician (in association with GRETA)
> Onshore wind farm maintenance technician (in association with GRETA)
> Provision of a 6-metre mast and wind turbine nacelle

lyc2l-eiffel.ac-dijon.fr

LYCÉE EUGÈNE GUILLAUME (Montbard)

> Voc. Diploma in Electricity and Connected Environments (MELEC) – renewable energy focus
> Certificate of Specialisation – Renewable Energy Technician option A
> Non-Destructive Testing Agent

lyc-eguillaume-montbard.eclat-bfc.fr

LYCÉE JANOT - CURIE (Sens)

> Voc. Diploma – Plastics and Composites
> BTS – Europlastics and Composites

lyc-janot-curie-sens.eclat-bfc.fr

SUCCESS STORIES

1957



Laboratory © CEA

Creation of the **CEA** site in Valduc, a research and production site for deterrent weapons.

1968



Vouglanges dam © D. Maraux

Commissioning of the **Vouglanges hydroelectric dam**, 3rd largest reservoir in France.

1928

Founding of Alstom Belfort, which in 1998 was renamed **Alstom**, without the "h", which is easier to pronounce in all countries.

1958

The result of a merger between the Creusot-Loire subsidiary of the Schneider group and the American company Westinghouse Electric, **Framatome** is created and produces its first nuclear reactors.

1999

ALSTOM creates a joint venture with ABB, named **ABB ALSTOM Power** in the field of power generation systems.



RESEARCH

FEMTO-ST (Besançon, Belfort, Montbéliard)
 > Engineering and computer sciences
 > Hydrogen fuel cell systems, thermal and electrical energy measurement, production, conversion and storage systems
 Collaboration between the CNRS, University of Franche-Comté, SupMicroTech – ENSMM, UTBM
www.femto-st.fr

FC LAB (Belfort)
 > Hydrogen Fuel Cells and Hydrogen Energy
 Collaboration between the CNRS, University of Franche-Comté, SupMicroTech – ENSMM, UTBM
www.fclab.fr

ICB (Dijon)
 > Optics, photonics and metallurgical processes
 Collaboration between the UTBM, University of Bourgogne Franche-Comté and CNRS
icb.u-bourgogne.fr

LaBoMaP (Dijon)
 > Materials and manufacturing processes.
 Campus Arts et Métiers collaboration
labomap.ensam.eu

LISPEN (Chalon-sur-Saône)
 > Multi-physics modelling, human-system interaction
 > Virtual immersion (virtual/augmented reality)
 Collaboration between the Arts et Métiers, Cluny, Lille and Aix-en-Provence campuses
lispensam.eu

BUSINESSES (non-exhaustive list)

CONVENTIONAL ENERGIES

Alfa Laval
 Comeca
 Dalkia France
 FluidExpert
 General Electric
 Industeel
 Jeumont Electric
 Leroy Somer
 Lufkin
 M-Plus Group
 Nexans
 Neotiss
 Prysmian
 Saint Gobin Seva
 Schneider Electric
 Turbine Casting
 Tyco
 Valinox
 Vallourec

NUCLEAR

APAVE
 Aubert & Duval
 CEA
 CETIC
 CLM Industrie
 EDF
 Framatome
 General Electric
 Manesmann Stainless Tube
 Technatom

WIND POWER - SOLAR ENERGY

Connected Wind Services
 EDF Renewables
 Elec ENR
 Engie
 H2ion
 Innergex
 Opale Energies Naturelles
 Servion
 WPD Onshore

HYDROGEN

Clhynn
 FORVIA Faurecia
 Gen-Hy
 H2sys
 Hynamics
 MaHytec
 Mcphy
 Schrader Pacific

COMPETITIVENESS CLUSTERS

NUCLEAR VALLEY CLUSTER (Chalon-sur-Saône)
 Promotes the emergence of innovative and competitive solutions for the region's civil and defence nuclear industry by mobilising all the resources (industrial, institutional, academic and scientific) in the area.
www.nuclearvalley.com
 426 members, including AURA
 12,000 direct jobs
 20,000 indirect jobs

VALLÉE DE L'ÉNERGIE CLUSTER (Belfort)
 Fosters and promotes the know-how and expertise developed by a network of companies and active members who contribute to the industrial excellence of the low-carbon energy and solutions sector.
vallee-energie.com
 60 members
 14,000 direct jobs
 35,000 indirect jobs

WIND FOR FUTURE CLUSTER (Dijon)
 A group of wind and solar energy companies with skills ranging from research to maintenance to operation, with a focus on training.
linkedin.com/company/wind-for-future
 50 members
 1,000 direct and indirect jobs

ROBOTICS VALLEY CLUSTER (Dijon)
 Creates synergies between companies, supports R&D, monitors emerging markets and aims to improve the region's attractiveness in terms of robotics and the industry of the future.
www.robotics-valley.eu
 71 members

IN BOURGOGNE-FRANCHE-COMTÉ

2007

> First **methanisation support programme**.
 > Commissioning of the region's **1st wind farm** on the Lomont site.



Picarreau solar farm © Corsica Sole

2022

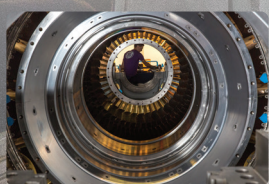
Commissioning of the **Picarreau solar farm** (Jura), spanning 27 hectares.

2021

General Electric Belfort delivers **Arabelle, the world's most powerful turbine** for installation at Hinkley Point C in England.

2023

> **Framatome relocates production** of nuclear reactor vessel internals for an investment of €100 million.
 > Framatome **delivers the first reactor vessel** for the Hinkley Point C EPR.
 > The Atlantic Group invests €150 million to **build a heat pump assembly site**.



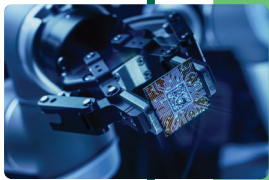
Arabelle © GE



EXPERTISE SERVING ENERGY


BUSINESSES

200	39,500	2
BUSINESSES	JOB	GLOBAL LEADERS



**ELECTRICITY –
ELECTRONICS,
AUTOMATION &
ROBOTICS**



METALLURGY

ENERGIES



**SPECIALIST TOOLING
AND MACHINES**



POWER CONVERSION

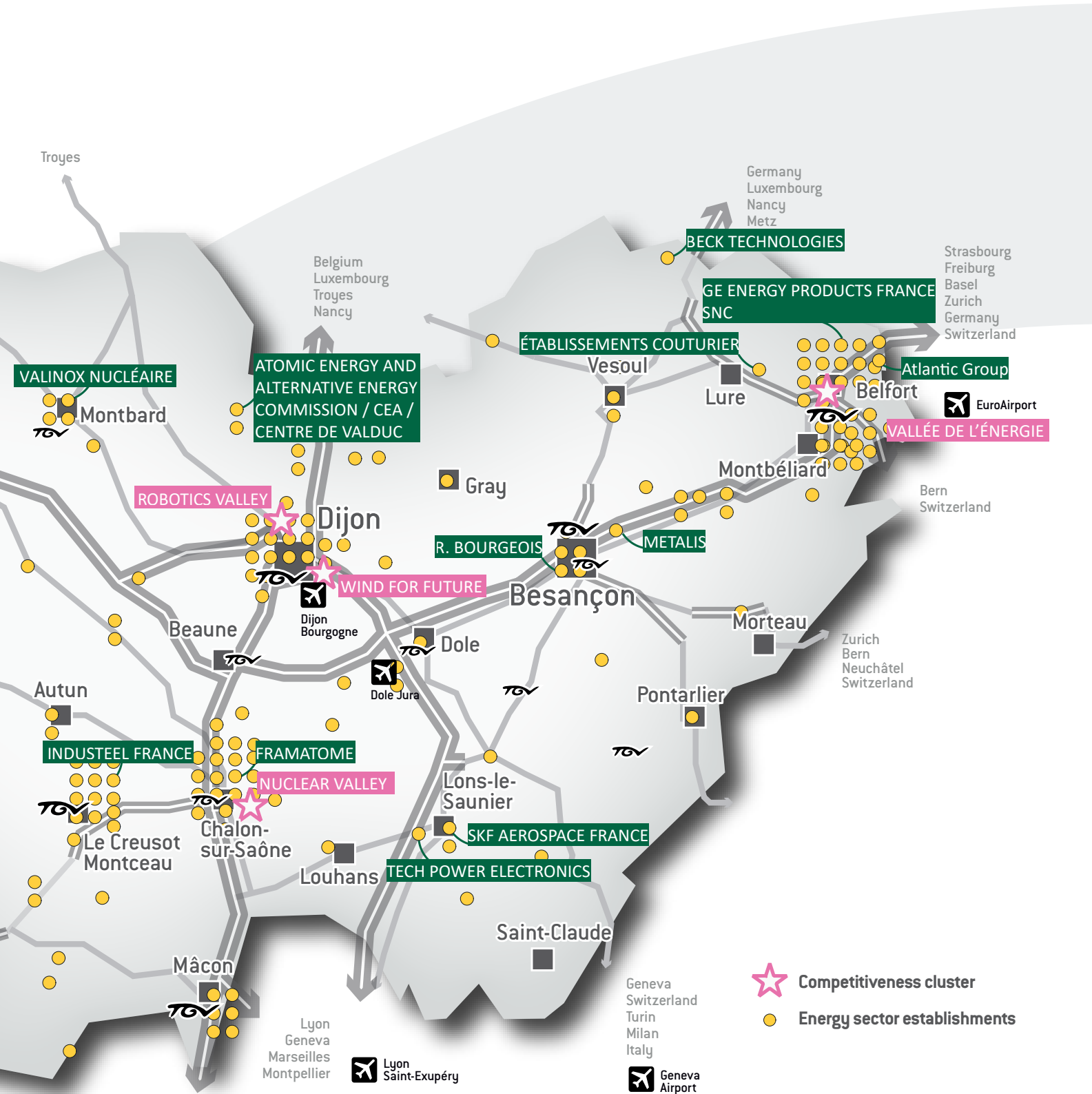
**MECHANICS AND
MICROMECHANICS**





SECTOR SERVING MAJOR PROJECTS

Steam boilers, nuclear reactors and turbines, including Arabelle, the most powerful in the world, have been manufactured here for over 150 years. For example, 20% of the world's power plants and 100% of France's nuclear power plants are equipped with turbines manufactured in the region, and 85% of the energy produced in Bourgogne-Franche-Comté comes from renewable sources: hydroelectricity, solar power, biomethanisation, wind power and wood. Having received the Hydrogen Territory label, the region is also a pioneer in hydrogen production.



YOUR ENERGY SECTOR CONTACT

Ludovic Diers
ldiers@aer-bfc.com
+33 (0)6 83 74 05 03



Maison de l'Économie
46 avenue Villarceau - 25000 Besançon
Tel. +33 (0)3 81 81 82 83

Maison Régionale de l'Innovation
64 A rue Sully - CS 77124
21071 Dijon Cedex
Tel. +33 (0)3 80 40 33 88

Local economic developers
in all 8 of the region's departments

THE REGIONAL ECONOMIC AGENCY OF BOURGOGNE-FRANCHE-COMTÉ

The Regional Economic Agency cooperates closely with stakeholders in business development, innovation, training and employment for:



Business project engineering by regional and strategic sector



Financial engineering



Innovative project engineering, ecological transition and energy recovery



Economic changes



Promotion and communication