

# The Transition Institute 1.5

The ambition for an actual transition

## A NEW RESEARCH INSTITUTE

The Transition Institute 1.5, 1.5 to echo the temperature target put forward by the IPCC, is an initiative launched by Mines Paris – PSL with the support of its Foundation. The ambition of this institute, dedicated to designing the low-carbon transition, is to provide informed scientific responses to the major challenge of carbon neutrality.

## AN AMBITIOUS RESEARCH PROGRAM

### Research focuses

#### FOCUS 1: The transition design

**The transition design** sets out to identify the mechanisms to be adopted to guarantee the decarbonization targeted.

#### FOCUS 2: An electric planet?

**An electric planet?** Investigates the implications of a vision involving decarbonization that would mean massive electrification: trajectories, operations, lifestyle, vectors, resources, competition, substitution, channels, technologies and costs.

#### FOCUS 3: The inclusive planet

**The inclusive planet** is devoted to identifying solutions and tools to involve all stakeholders in the transition, combining the multi-scale challenges of the climate challenge and the multiple constraints that each faces.

#### FOCUS 4: The planet as an area of influence

**The planet as an area of influence** analyzes the transition from a perspective of international issues, to consider the planet as an area of influence: geostrategic, commercial, economic, and political.

## DIVIDED INTO A SYSTEMIC VISION

### Through 9 angles of analysis



#### Technological products

Including innovative processes and materials, prospective scenarios and software technologies, etc.



#### Vectors and resources

Vectors and energy resources.



#### Systems operation and flexibility

Physical systems: electricity, gas, energy, energy efficiency, demand-side management, etc.



#### Spatiality and pace of implementation

Pace of implementation of technologies, industries, GIS, etc.



#### Lifestyle and society

Behaviors, usages/demand, acceptability, nudges, etc.



#### Governance, regulation, and institutional conditions

Governance frameworks and influence on multiple levels (international, national, organizations, companies, regions), legal aspects, environmental responsibility, development policies, environmental policies, measures, engineering, historical analysis, etc.



#### Externalities and environmental impacts

LCA, biodiversity, information technologies, recycling, natural resources (water, materials for energy, all types of pollution, land use, etc.).



#### Cost and financial engineering

Investments, O&M, finances, markets, subsidies, taxes, etc.



#### Land-use management

Networks (all types), centralization/decentralization, urban planning, cities, industrial ecoparks, circular economy, flood plains, etc.

## FEDERATING A MULTITUDE OF DISCIPLINARY FIELDS at Mines Paris – PSL

### 17 RESEARCH CENTERS

### 5 RESEARCH FIELDS

Earth sciences and environment  
Energy and processes  
Mechanical and materials engineering  
Mathematics and systems  
Economics, management and society

## ORIGINAL DISSEMINATION OF SOLUTIONS DEvised at Mines Paris – PSL

- Information notes and position papers
- Summaries of research by focus area
- Podcasts
- Organization of regular public scientific seminars
- Training aimed at decision-makers
- Doctoral student blog



## AN INSTITUTE BUILT AROUND ITS STUDENTS

### DOCTORAL TRACK

Interdisciplinary thesis subjects  
to encourage exchanges between centers  
and departments

Thesis subjects that correspond to the TTI.5  
scientific program

### ACADEMIC TRACK

Creation of a TTI.5 course  
for Mines Paris – PSL students

Specialized TTI.5-accredited courses

In-depth experience related  
to themes covered by TTI.5:  
Research term and Internship



## Contact

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