

The Transition Institute 1.5

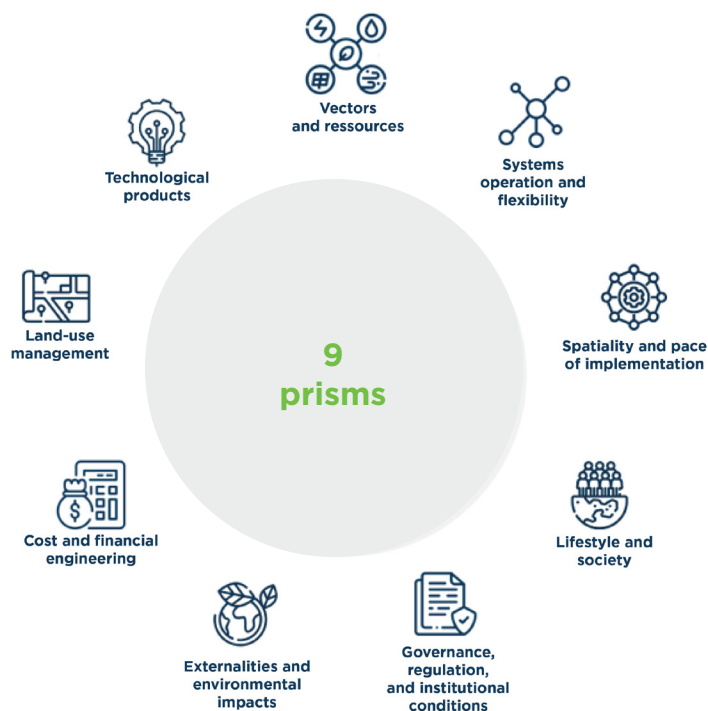
The ambition for an actual transition

DOCTORAL AND POST-DOCTORAL PROGRAM

AXIS 5: The living planet

The Earth is a 'living planet' because it possesses properties that allow life to emerge and be sustained, as manifested by the presence of organisms capable of reproducing, growing, developing and, ultimately, dying. Living beings structure the biosphere, which is itself the result of multiple interactions with the elements of the geosphere (lithosphere, hydrosphere, atmosphere).

The systemic approach envisaged will be developed through the following prisms of analysis:



Mines Paris - PSL departments

Earth sciences and environment

Energy and processes

Mechanical and Materials engineering

Mathematics and systems

Economics, management, society

A RESEARCH INSTITUTE dedicated to designing the transition

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 transition, is to provide informed scientific responses to the major challenge of climate change, on issues related to adaptation, mitigation and biodiversity.

TTI.5 SCIENTIFIC PROGRAM

Research axis

AXIS 1: The Transition Design

Design of the transition aims to clarify the mechanisms required to guarantee the desired decarbonization.

AXIS 2: An electric planet?

An electric planet? explores the implications of an associated vision of decarbonization, including massive electrification : trajectories, operations, lifestyles, vectors, resources, competition, substitution, sectors, technologies, cost.

AXIS 3: The inclusive planet

The inclusive planet, is dedicated to identify solutions and tools to engage all actors in the transition, reconciling at the same time the multi-scale issues of the climate challenge and the multiple constraints that they are both facing.

AXIS 4: The planet as an area of influence

This axis will be dedicated to the analysis of the transition through the prism of international issues, to take into account the planet as an issue of influence of all kinds : geostrategic, commercial, economic, political, etc.



TTI.5 doctorates: two types of affiliation

Doctorates financed by TTI.5

At TTI.5, one of our main missions is to finance interdisciplinary theses connected to our research themes. The emphasis is on collaboration, involving internal exchanges and external dissemination of results, along with access to targeted training (see p.4).

To secure financing, your doctoral project will need meet with certain criteria:

- It must jointly involve at least two Mines Paris – PSL departments, provided at least one is part of Mines Paris – PSL (30% minimum supervision per department)
- It must take an interdisciplinary approach to the theme it tackles
- It must fully correspond to one or more of the five TTI.5 research areas and consider the prisms defined by the institute in its approach (see p.1).

In addition, as well as following the recommendations of the doctoral school overseeing their thesis, which takes priority, as a doctoral student, you are expected to join and contribute to the TTI.5 community (see p.3).

Part of your doctoral project must imperatively involve situating the chosen theme in the context of the TTI.5 institute: this requires making a state-of-the-art by looking closely at how the theme is positioned in terms of the four TTI.5 research areas, and also providing, in summary form, a systemic, holistic vision of the results obtained. The part of the thesis manuscript that specifically tackles these questions will be the object of a Working Paper published on the TTI.5 institute website and submitted to HAL (with DOI assignation).

Doctorates accredited by TTI.5

Numerous current or future theses at Mines Paris cover TTI.5 research themes.

With the approval of their thesis supervisor(s), doctoral students can request TTI.5 accreditation. This accreditation means that students can join and participate in the TTI.5 community (see page 3). All accreditation requests must be approved by the TTI.5 Monitoring Committee.

TTI.5 funding

HOW MUCH FUNDING DOES TTI.5 PROVIDE?

- A doctoral project can be funded by TTI.5 through the MINES ParisTech Foundation, which receives donations made to the Institute. Doctoral students financed by TTI.5 are also granted an additional sum for the purchase of material or to participate in conferences. Centers may need complementary funding, such as to cover the costs of projects involving a lot of experiments.
- TTI.5-accredited students can benefit from aid to finance their participation at seminars and events organized as part of TTI.5 (see p.4).

For any question or request for TTI.5 certification :
please contact **Sabrina Bekli** - sabrina.bekli@minesparis.psl.eu - **04.93.95.75.71**



TTI.5 doctorates and post-doctorates : eligibility requirements and commitment

Personalizing your learning track to correspond to both your inspirations and your constraints is possible. Do not hesitate to contact the TTI.5 team.

	FINANCED	ACCREDITED	POST DOC
SUBJECT			
Subject coming under one of the TTI.5 research areas	✓	✓	✓
Subject involving different Mines Paris - PSL departments	✓	(✓)	✓
Subject that is inter-or multi-disciplinary	✓	(✓)	✓
Subject not entirely covered by confidentiality	✓	✓	✓
PARTICIPATION & CONTRIBUTION TO THE COMMUNITY			
Present and take part in doctoral student seminars (visio) (see p.4)	✓	✓	✓
Take part in TTI.5 public seminars (visio) (see p.4)	✓	(✓)	✓
Attend Summer or Autumn school (in person) (see p.4)	✓	(✓)	(✓)
Participate in a TTI.5 event (organization, presentation of work, etc.)	✓	(✓)	(✓)
Publish a scientific paper			✓
Write a working paper (see p.2)	✓	✓	(✓)
Publish an explanatory paper (writing and/or supervision of a student on the TTI.5 academic track)	✓	(✓)	✓
Participate in a TTI.5 podcast	(✓)	(✓)	(✓)
VISIBILITY			
Compulsory indication in all productions, acknowledgements, etc.	✓	✓	✓
TTI.5 visibility and logo	✓	✓	✓
Thesis posted on TTI.5 website	✓	✓	✓

✓ Compulsory
(✓) Optional

TTI.5 events for doctoral students



• TTI.5 PUBLIC FORUM & WORKSHOP

The Transition Institute 1.5 organises an annual Forum, open to the public, as well as an internal Workshop, every year, in Paris.

These two events are an opportunity for TTI.5 doctoral students to meet and exchange ideas in person, as well as to present their work and share their research findings.

• TTI.5 SUMMER SCHOOL OR AUTUMN SCHOOL

A «summer school» or «fall school» is organised annually by TTI.5, enabling doctoral students to validate training hours. TTI.5 doctoral students must follow the recommendations of their Doctoral School regarding compulsory training. He or she may take part in events that can be counted towards the mandatory quota defined by the doctoral school.

• TTI.5 WEBINARS

TTI.5 has been organising a series of monthly webinars to disseminate and discuss research work through an inter-disciplinary approach.

The following take place on alternate months:

- Doctoral webinars

Scientific presentations by doctoral students followed by a discussion that can be used for free exchanges or to disseminate information.

- Public webinars

Each seminar is organised on a theme and led by a specialist, and includes two to three scientific presentations made by members of the TTI.5 community (including doctoral students), followed by a free or directed discussion.

DOCTORAL WEBINARS 2024-25

- « Identification of optimal multi-criteria building renovation strategies », Thibault Goessel (PERSÉE)
- « Optimal transport-based method for blind hyperspectral unmixing », Delphine Doutsas (CMM)
- « Energy measurement as first step for power-aware application optimization », Roblex Nana Tchakoute (CRI/CMM)
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- « The role of district heating networks in the European energy system of 2050 », Maxime Vrain (PERSÉE)
 - « Next-generation thermal superinsulation with pectin composite aerogels », Eleni Effraimopoulou (PERSÉE et CEMEF)
- « Evaluation of the development capacity of primary lithium production by 2040 », Zeinab Mortada (GÉOSCIENCES)
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- « The new models of sufficiency : From sufficient consumption to sufficient production », Benjamin Combes (CGS et Paris Dauphine)
 - « Decision-making methodologies for the development and contracting of green hydrogen production systems », Owen Palmer (PERSEE)



Contact

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