

# WP4: Industry and innovation

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As one of the largest research infrastructure projects built in Europe today, ESS offers significant innovation opportunities.

ESS is committed to  
"contribute to top-level  
research, technological  
development, innovation  
and societal challenges"

ESS Statutes, Article 2.2.a

# BrightnESS (2015-2018)

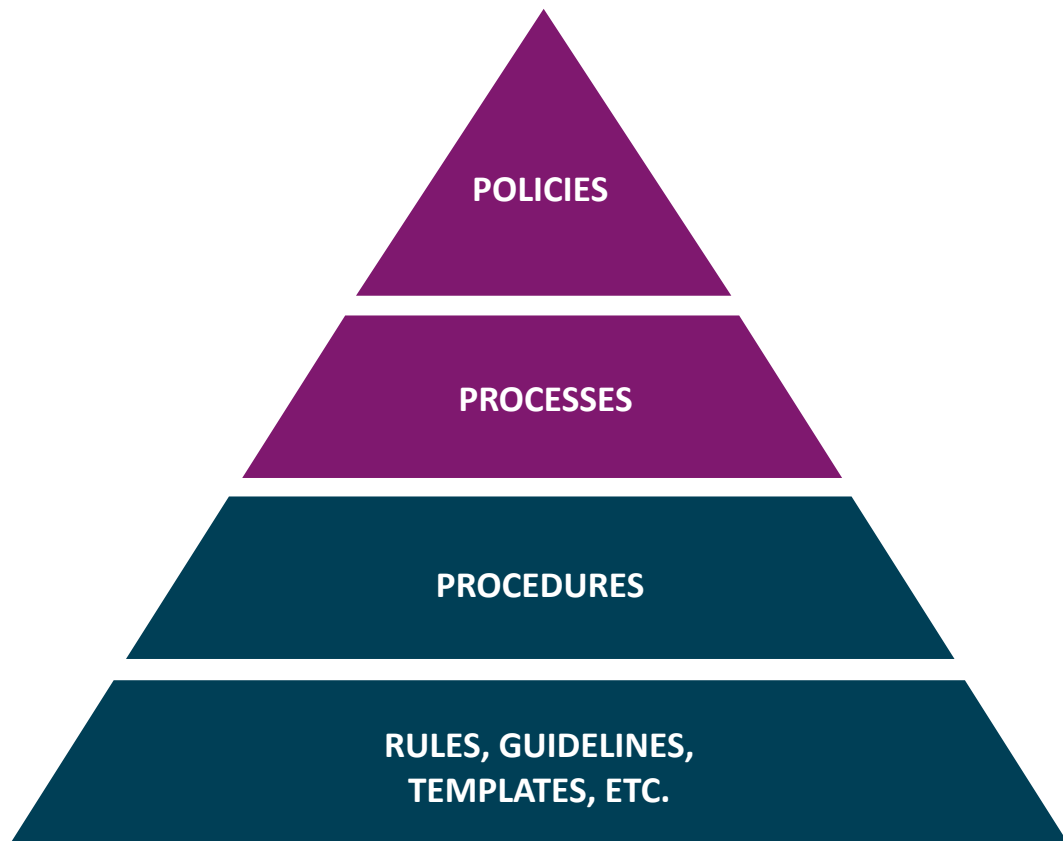
## Results of Task 3.2: Capacity Building in Technology Transfer






EUROPEAN  
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# Management System





# Principles of ESS Innovation Policy



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## ESS Policy for Innovation

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The European Spallation Source primary mission is to enable world-class research using neutrons, to contribute to the strengthening of Europe's and the Founding Member countries position in research in the world. We aim to generate or to enable to generate knowledge that will impact society in terms of economic growth, employment, sustainability and technological contributions to the solution of the world's great challenges.

This research will lead to the emergence and creation of new ideas, devices, methods and applications of significantly better solutions that meet new requirements, unarticulated needs, or existing market needs. Innovation activities, in this context, in its broadest sense, may also include R&D that is not directly related to the development of a specific innovation.

We embrace Open Innovation and will pursue its goals with external partners, understanding that not all innovation will happen at ESS. We will encourage the exploitation and dissemination of innovations created or enabled by the use of ESS facilities and by ESS staff, for new markets and new uses.

We encourage industry to make use of our facility and the available scientific and technological knowledge to create future, marketable innovation. To this purpose, ESS will make its facilities and staff accessible also for industrial usage of the ESS. We will also encourage our academic users to cooperate closely with industry to use our facilities.

We will exploit and disseminate innovations through patenting, spin off companies, collaboration with strategic potential partners, and other forms of activities suitable for obtaining the goals of this policy. We will consider protecting the intellectual and market value of our innovations if there is a clear case for doing so, that would benefit the organisation or its stakeholders.

This Policy applies to everyone with an employment contract with ESS. It is the responsibility of staff members of ESS to document new ideas in a form or format provided by ESS, if and when there is good reason to believe that the idea is innovative and has a knowledge or monetary value to ESS or ESS stakeholders.

The responsibility for the implementation of the Innovation policy lies with the ESS Division for Communication, External Relations and In-Kind Management.

	Name	Role/Title
Owner	Adam Weeks	Head of Division, Communications and External Relations
Approver	John Womersley	Director General

Template: Policy 000-000000 Rev. 1, Action Date: Jul 18, 2016

- Policy covers **innovation activities in their broadest sense**
- **Open Innovation** - sharing rather than strongly defending, collaboration over competition
- **IP protection/commercialisation** only when needed for more effective knowledge transfer
- **Industry is encouraged to use the ESS facility** and also to collaborate with academia

# Input to ESS Innovation Strategy

1<sup>st</sup> TTO Conference



Results



Technical  
University of  
Denmark



- 11 October 2017
- Seven external TT expert speakers
- 60 TT & RD participants
- Preceded by Internal Innovation Workshop on 29 August 2017 to collect innovation data

Input to the ESS  
Innovation Framework:

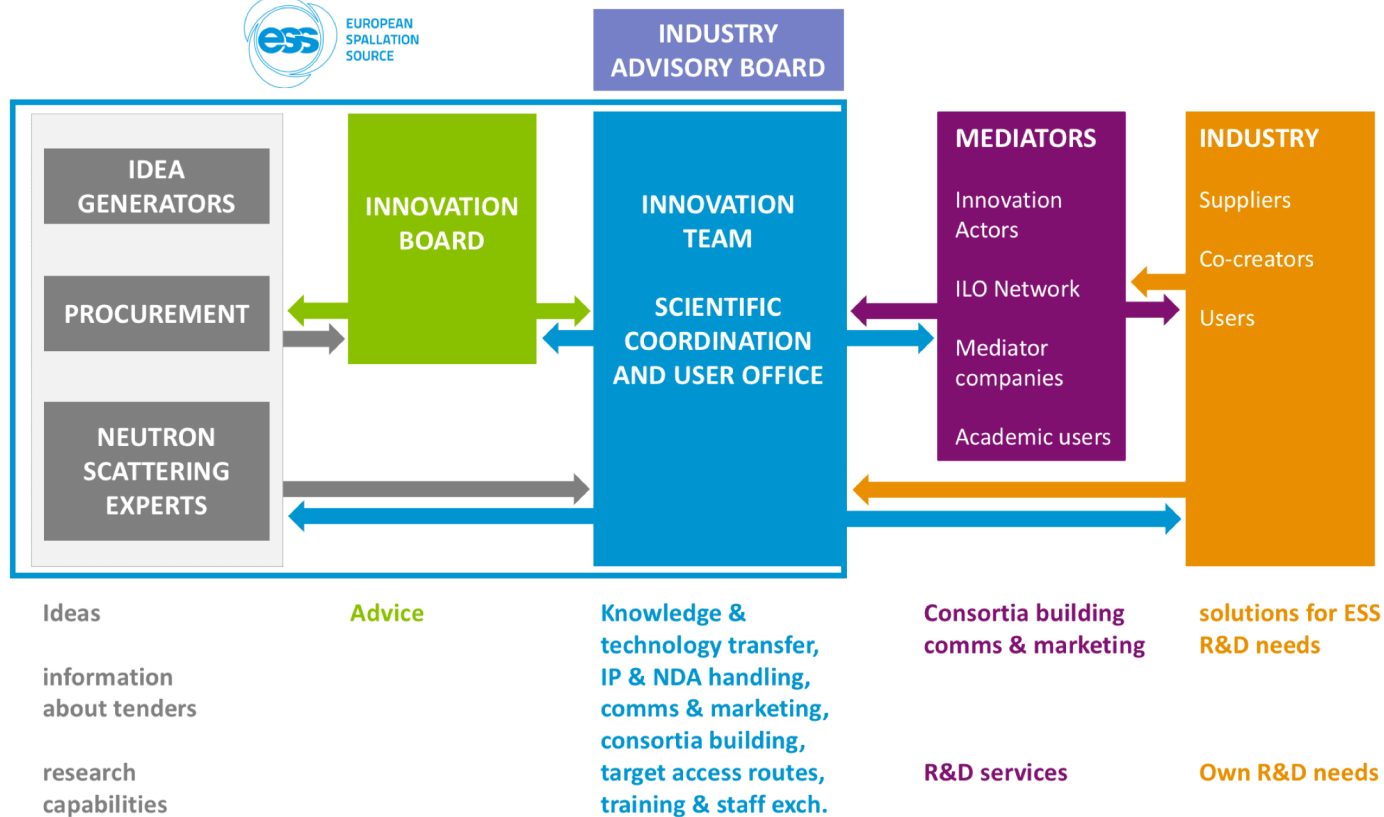
- Strategy recommendations
- Process
- Procedures
- Guidelines



# ESS Innovation Strategy

- **Provide guidance for the implementation of the ESS innovation framework**, taking into account relevant policies
- **Ensure a common understanding of innovation across ESS**, and encourage an innovation culture at ESS
- **Maximise impact of ESS throughout its entire lifecycle**, considering the different project phases and priorities
- **Define owners of various innovation activities**, and **specify** their **interaction with** internal and external **stakeholders**

# ESS Ecosystem Innovation Stakeholders





# Innovation Process



## Innovation Procedures

- **Guiding** the individual sub-steps of **the Innovation Process** and related activities (innovation in the broader sense)
- **Discussed with future users**
- Documentation prepared **in cooperation with DTU and ESP Central**

# Industry and innovation BrightnESS<sup>2</sup>





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NOW: Industry as supplier



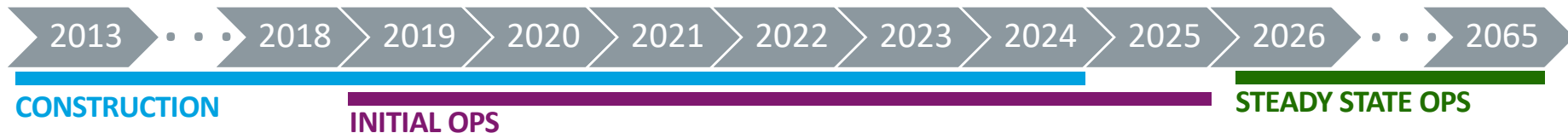
Moving towards operations



FUTURE: Industry as  
supplier / user / beneficiary



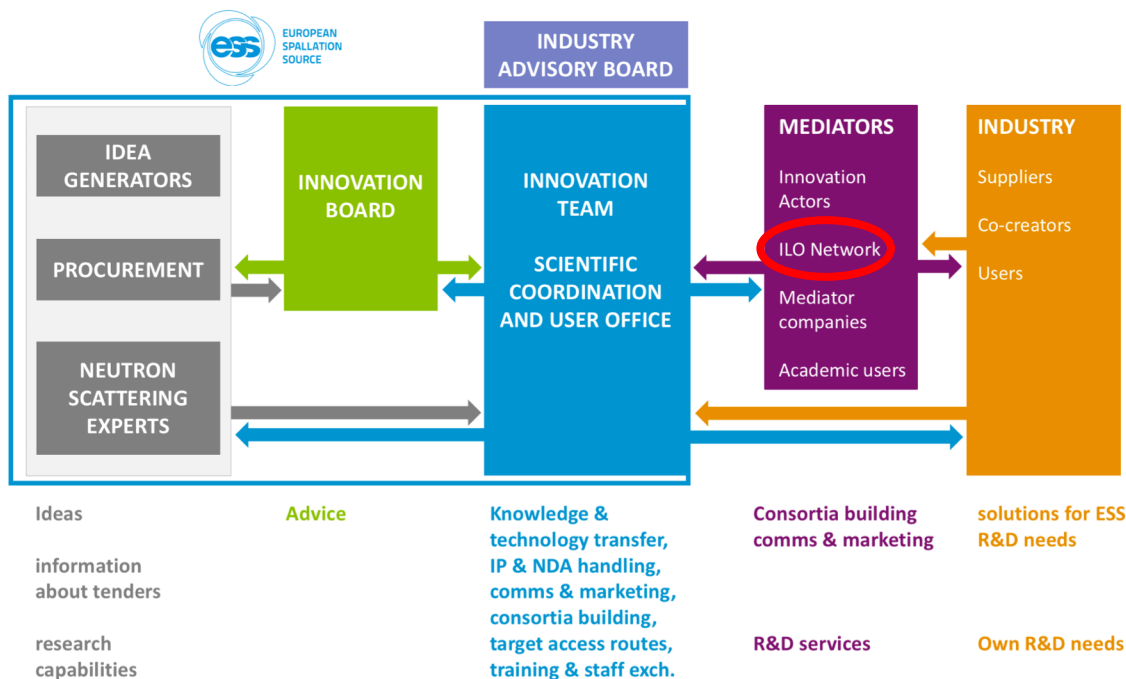
WP4 aims to help ESS to prepare for the **changes anticipated in innovation activities and industrial engagement** as the facility moves closer to **operations**





# 4.1 Implementing the ESS Innovation Strategy

- **Establishing an innovation culture at ESS**
  - Getting people and roles in place
  - Internal capacity building
  - Internal incentive system
- **Setting-up a strategic roadmap for ongoing technological upgrades of ESS**
  - Mapping cutting edge technologies
  - Identifying needs and potential upgrades



# 4.1 Implementing the ESS Innovation Strategy

## Internal Stakeholders

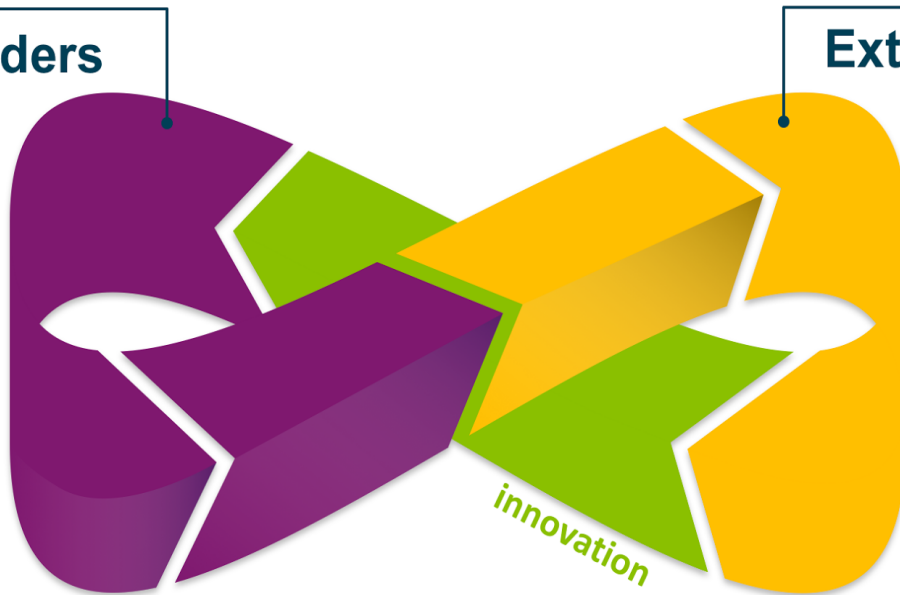
**Management:** top and middle management

**Idea generators:** technical and R&D staff

**User related:** beamline scientists, SCUO

**Supplier related:** Procurement Department

**Innovation related:** TTO



## External Stakeholders

**Users:** academic users, industrial users, industrial-academic partnerships, mediator companies

**Suppliers:** industry, ILOs

**Innovation ecosystem:** entrepreneurs, business support networks, industry, private and public funders, science parks, incubators, cluster initiatives, regional innovation systems, innovation brokers and intermediaries

## 4.2 Evolving the ESS ILO Network

- **Develop a long-term strategy to utilise ILO Network for innovation activities at ESS**
  - Online survey and expert interviews
  - Two interactive workshops
- **Foster cross-border collaboration between ILO members**
  - Explore possibilities how to enhance cross-border collaboration and indirectly increase competitiveness of national industries



**ILO Meeting in Lund, Feb 2017**

## 4.2 Evolving the ESS ILO Network

### March 2018 survey among ILOs in preparation for BrightnESS<sup>2</sup> proposal

- Five ILOs have a long-term plan in place or under development
  - Including long-term business strategy creation
  - Local ILOs contact points networks creation/local ILO fora founding
  - National supplier databases
  - Preparation of the companies/public institutions to match Big Science needs
- Ten ILOs have yet to start work on their long-term strategy
- All are keen to play an active future role in the ESS innovation ecosystem
- ILOs are an important conduit for various knowledge fields
  - Providing local market knowledge -including private and public players
  - Support of technology transfer/facility use



**ILO Strategy Meeting, June 2018**



## 4.3 Preparing for industrial users

- **Developing policies, processes, procedures to ensure an efficient entry point for industrial use**
  - Rules for proprietary and non-proprietary industry-related access to ESS
  - Exploring different mechanisms including a potential industrial beam time selection panel
  - Developing Service Catalogue and Pricelist with three use cases
- **Preparing for targeted access routes for industrial use**
  - Round-tables, workshops etc
  - Quality Assurance, experimentally-validated Neutron Quality Label for residual stress measurements
  - Test framework for topical training for mediators and industry
- **Fostering innovation by growing capability**
  - Exchange of staff between neutron sources, mediators and industry



# brightness<sup>2</sup> WP4: Innovation and industry

## Aim

Propagate recommendations for an ESS Innovation Strategy, build up on the elemental innovation framework established at ESS, encourage an innovation culture, and increase portfolio of ILOs

Tasks		
4.1	Implementing the ESS Innovation Strategy	ESS, PSI
4.2	Evolving the ESS ILO Network	ESS
4.3	Preparing for industrial users	ESS, TUM



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PAUL SCHERRER INSTITUT



FRM II  
Forschungs-Neutronenquelle  
Heinz Maier-Leibnitz

Deliverables		
D4.1	Evolvement potential of the ESS ILO Network	M14
D4.2	Strategic roadmap for technological upgrades of ESS	M18
D4.3	Cross-border activities	M30
D4.4	Process and Procedures for targeted access routes	M30
D4.5	Service catalogue	M30
D4.6	Report on capacity building	M35

Milestones		
MS3	First interactive ILO workshop	M06
MS5	Establishment of the external Industry Advisory Board	M09
MS6	Follow-up interactive ILO workshop	M12
MS7	Establishment of an internal Innovation Board at ESS	M12
MS17	Presentation of the ESS Access Policy to the Council	M24



BrightnESS<sup>2</sup> is funded by the European Union Framework Programme for Research and Innovation Horizon 2020, under grant agreement 823867