

# In-Kind Best Practice Workshop

## The ESS In-Kind Framework: *A Context for Collaboration*

Allen Weeks

November 14-15, 2016

Bilbao, Spain



## Structure of the Talk

- Current status of the project
- The ESS In-Kind Framework Model

## Aim of the Talk

- Provide a relevant context for discussion about standardisation in the ESS project.

## European Spallation Source ERIC

European Research  
Infrastructure Consortium

Sole governing body is the  
European Spallation Source  
ERIC Council

comprised of representatives  
from the Member and Observer  
Countries



**Established  
Oct 1, 2015**

John Womersley  
New Director General



- Since November 1, 2016
- Former President ESFRI
- Former CEO STFC, UK
- Particle Physicist



## John Haines ESS Project Manager



Deliver ESS Project according to approved scope, schedule, and cost

Focus on revising baseline plans before the end of the year

- Develop detailed installation and testing plans
- Better defined interfaces with Conventional Facilities and between sub-projects
- Examining cost and scope
- Primary driver is delivering early science in 2023

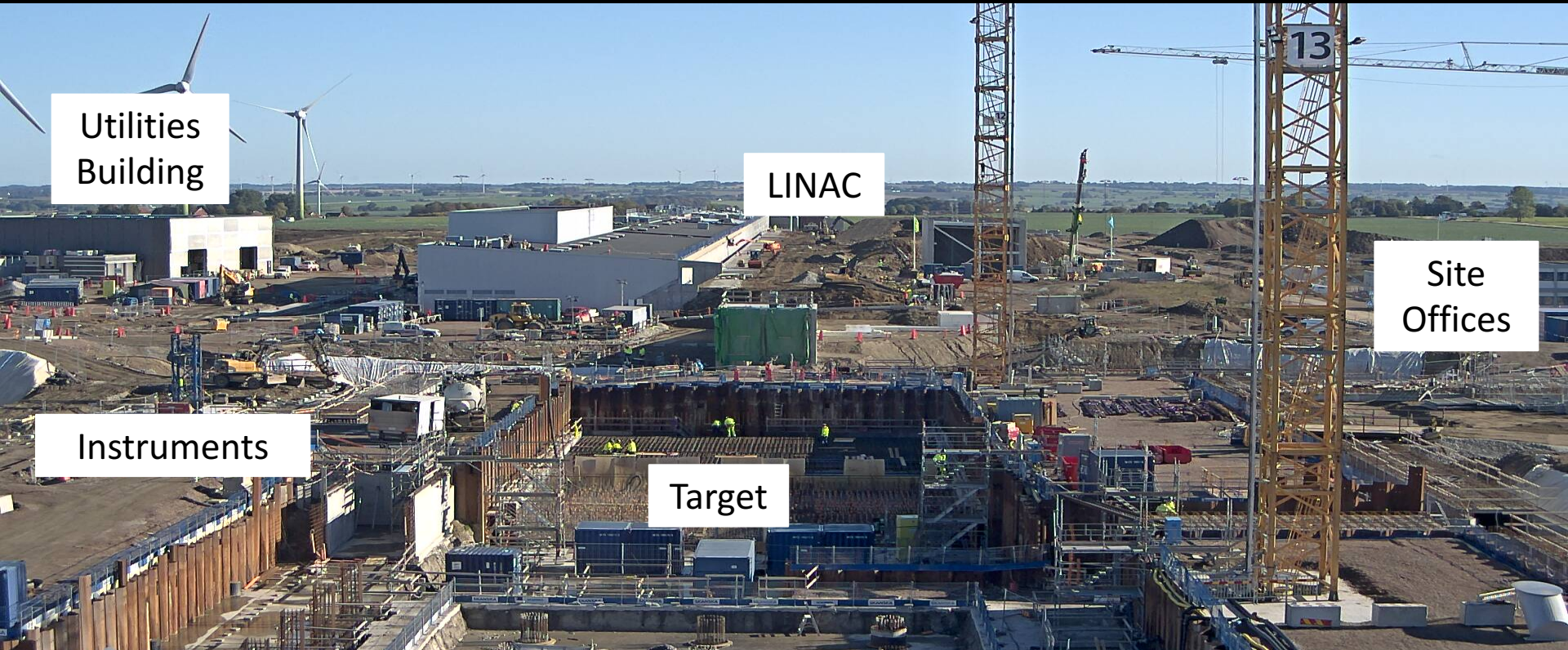
Utilities  
Building

LINAC

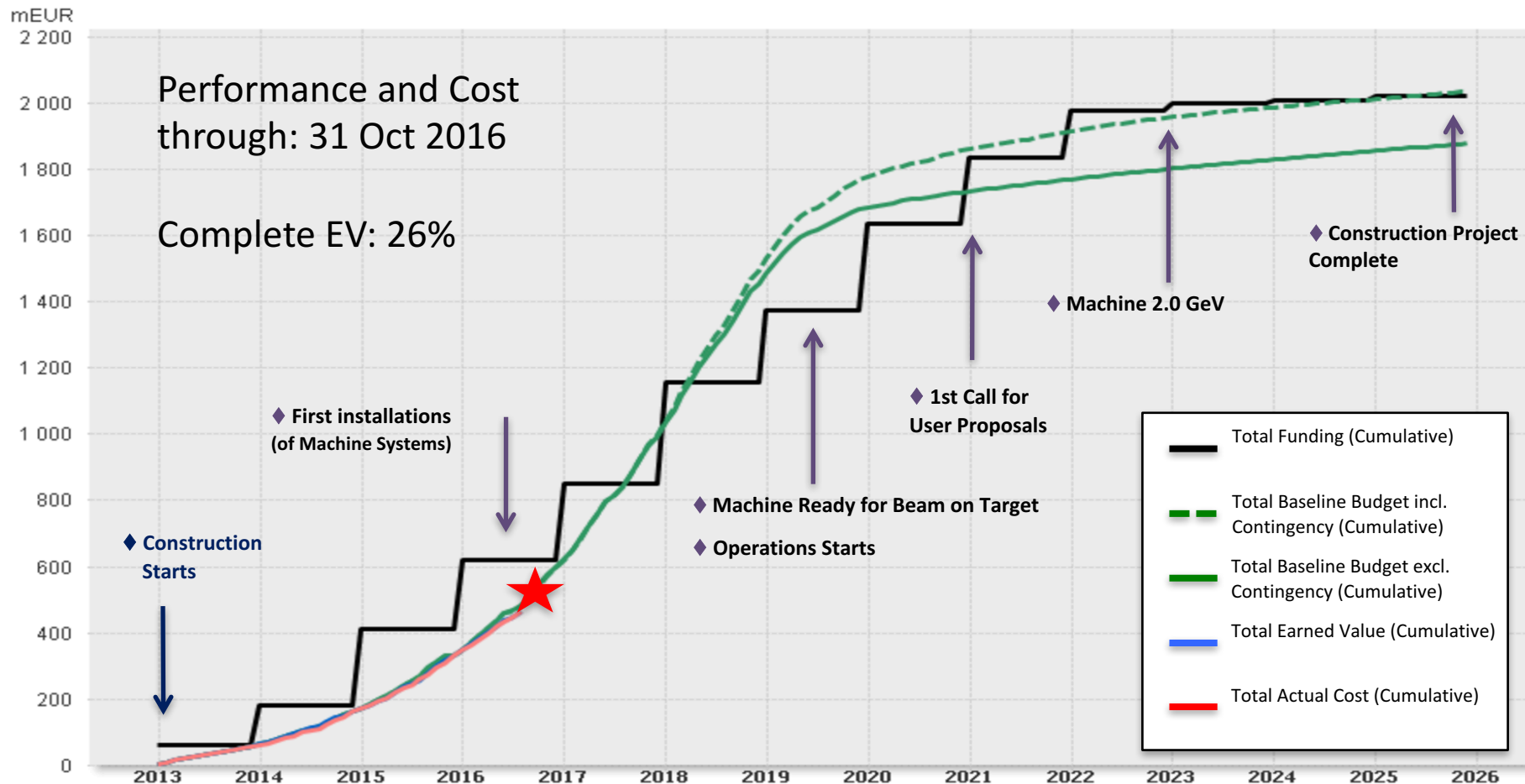
Instruments

Target

Site  
Offices

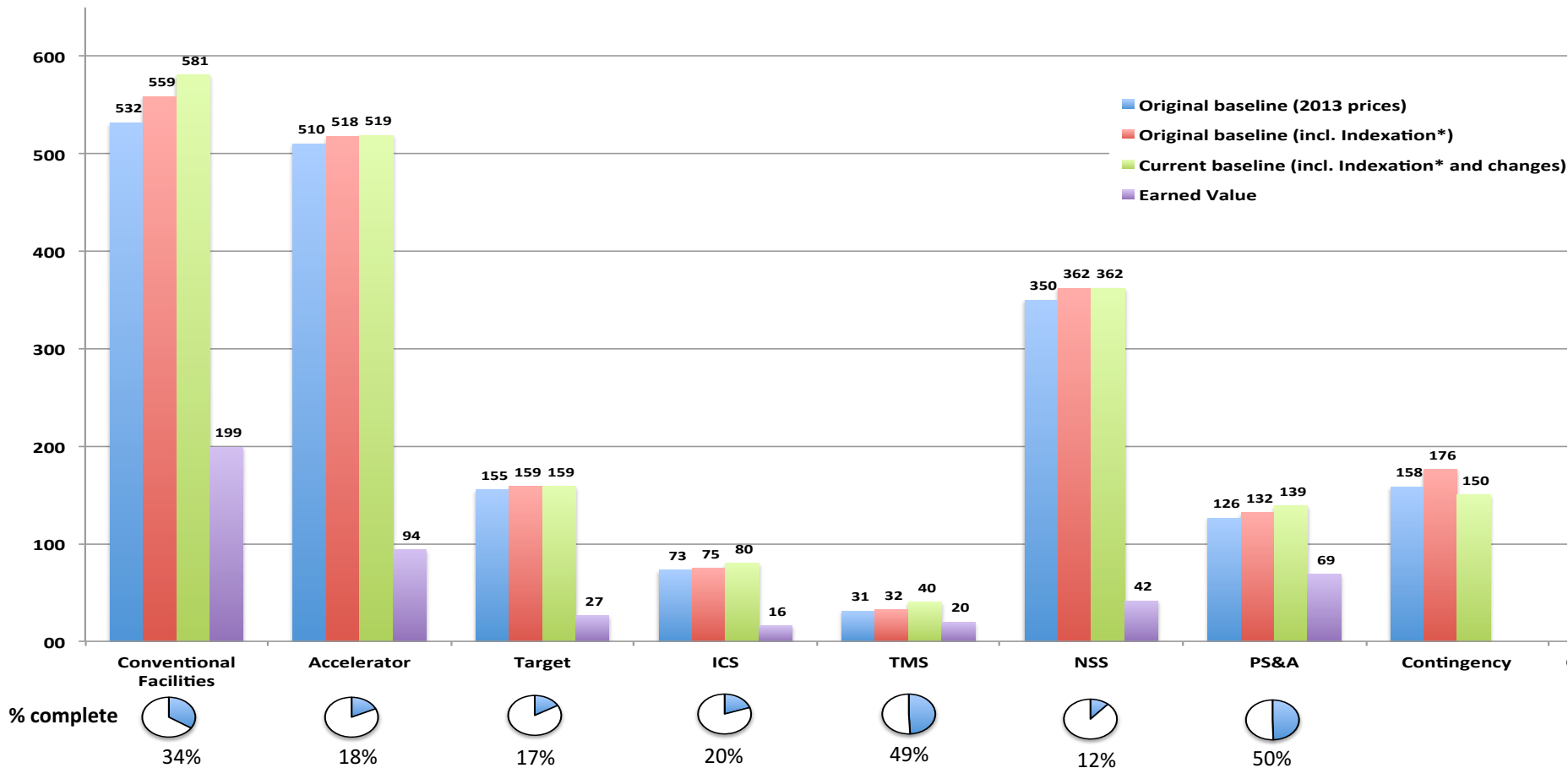


# Funding and Budget Profile

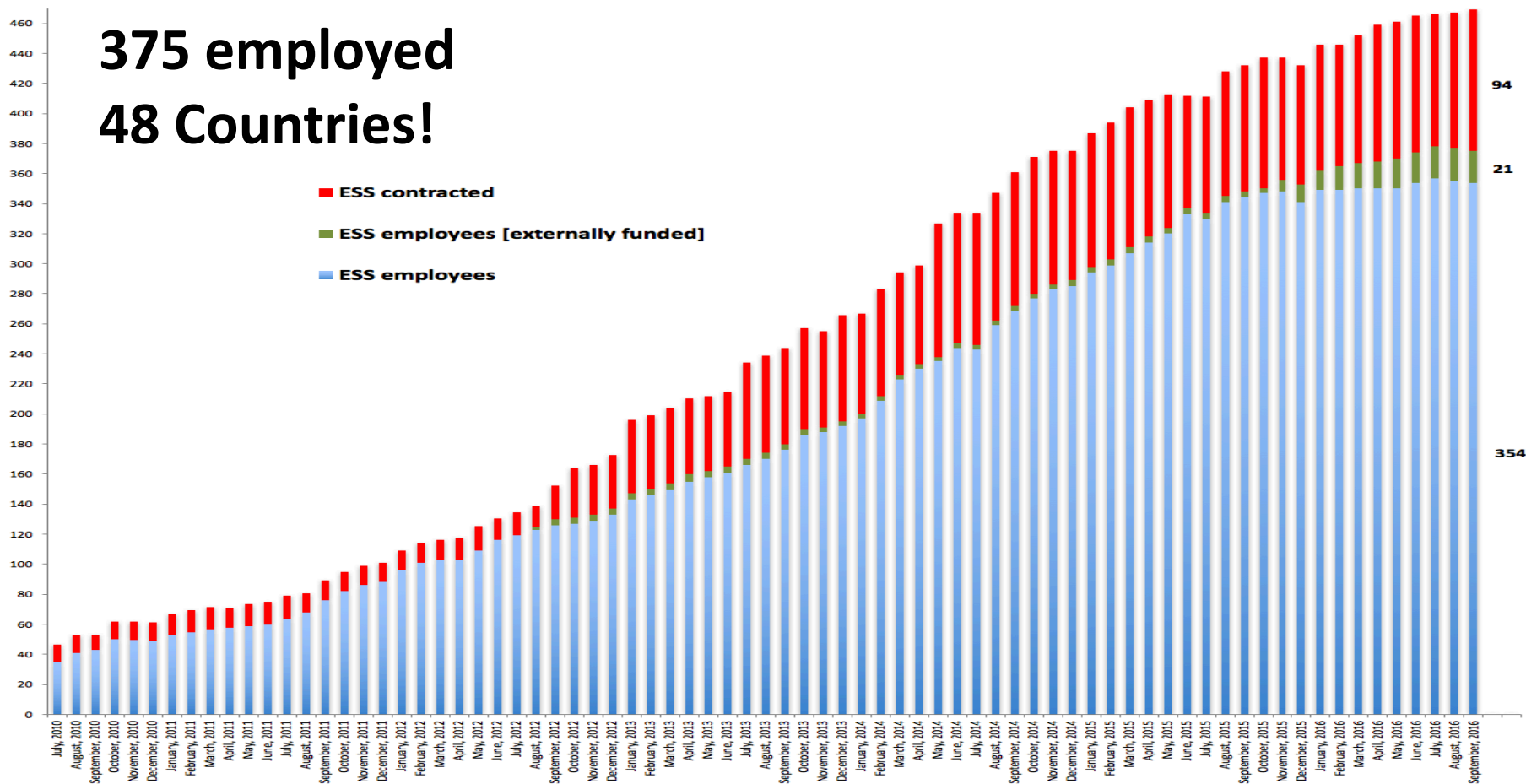


# The Baseline and Status

Million Euro



**375 employed  
48 Countries!**





# Funding Is Cash And Deliverables

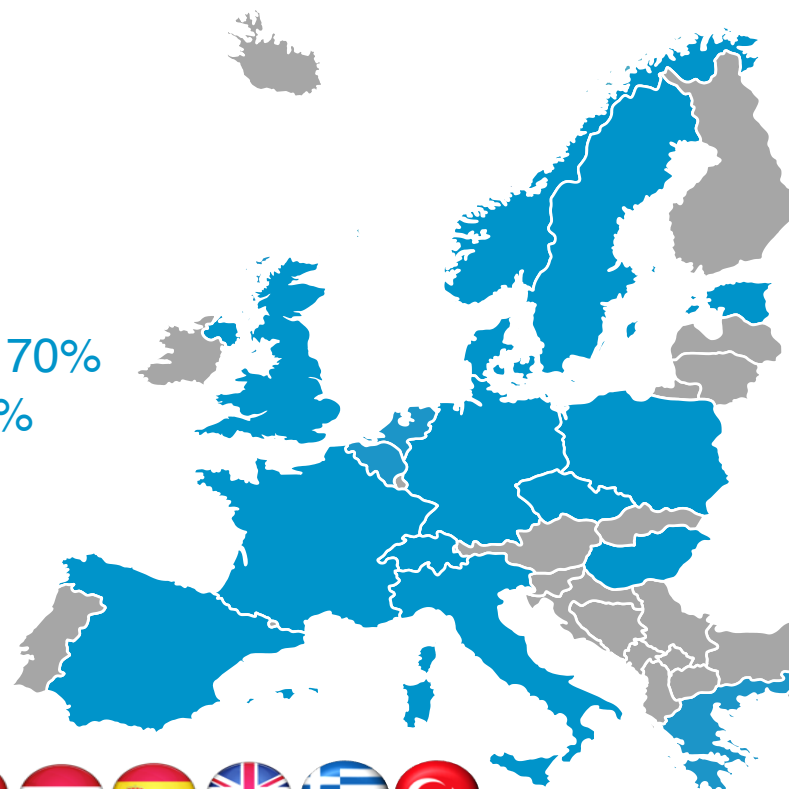
## Host Countries of Sweden and Denmark

|              |       |      |      |
|--------------|-------|------|------|
| Construction | 47.5% | Cash | 100% |
| Operations   | 15%   |      |      |

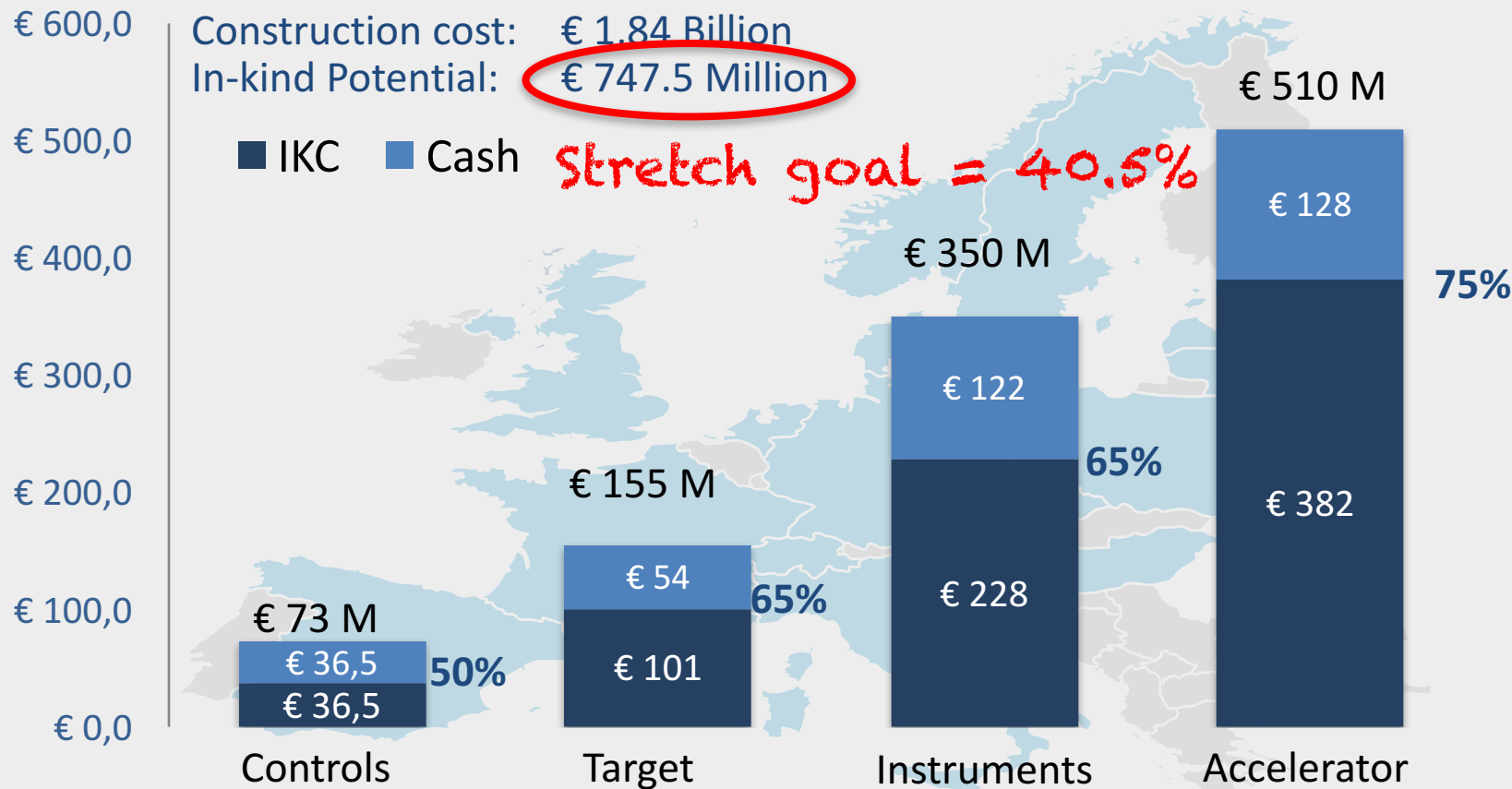
## Non Host Member Countries

|              |       |                      |       |
|--------------|-------|----------------------|-------|
| Construction | 52.5% | In-kind Deliverables | ~ 70% |
| Operations   | 85%   | Cash                 | ~ 30% |

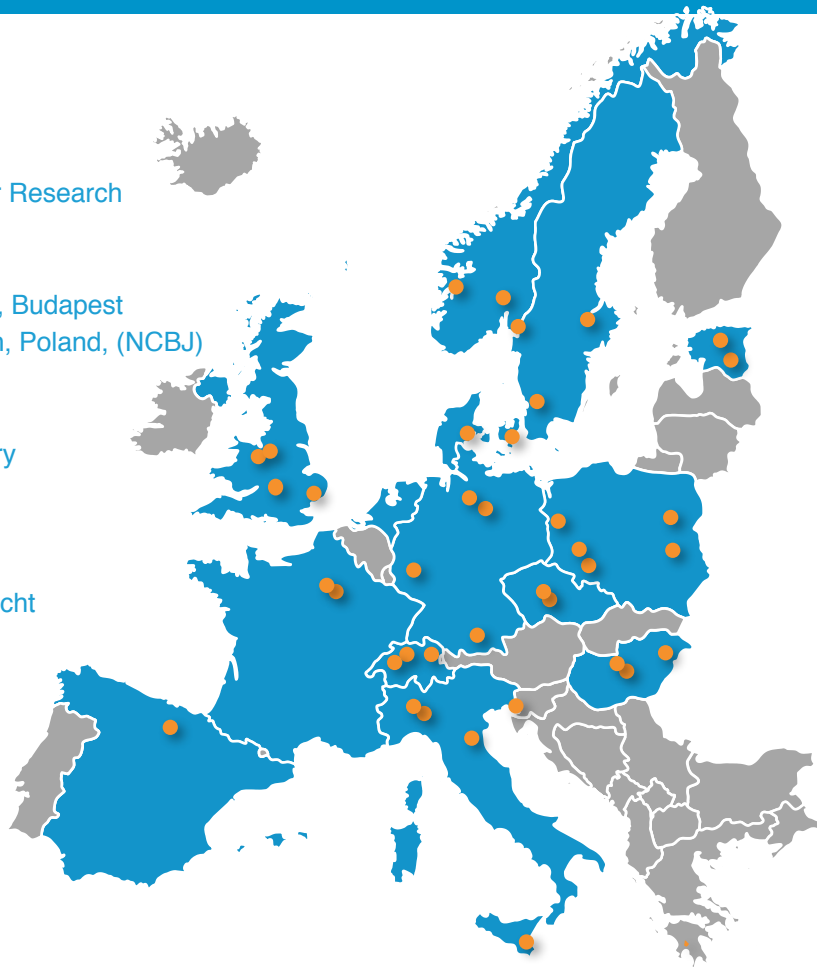
Members' In-Kind Goals =  
37% or €685 million



# Looking for Scope (2013 Cost Book)



Aarhus University  
 Atomki - Institute for Nuclear Research  
 Bergen University  
 CEA Saclay, Paris  
 Centre for Energy Research, Budapest  
 Centre for Nuclear Research, Poland, (NCBJ)  
 CNR, Rome  
 CNRS Orsay, Paris  
 Cockcroft Institute, Daresbury  
 Elettra – Sincrotrone Trieste  
 ESS Bilbao  
 Forschungszentrum Jülich  
 Helmholtz-Zentrum Geesthacht  
 Huddersfield University  
 IFJ PAN, Krakow  
 INFN, Catania  
 INFN, Legnaro  
 INFN, Milan  
 Institute for Energy  
 Research (IFE)



Rutherford-Appleton Laboratory, Oxford (ISIS)  
 Copenhagen University  
 Laboratoire Léon Brillouin (LLB)  
 Lund University  
 Nuclear Physics Institute of the ASCR  
 Oslo University  
 Paul Scherrer Institute (PSI)  
 Polska Grupa Energetyczna - PGE  
 Roskilde University  
 Tallinn Technical University  
 Technical University of Denmark  
 Technical University Munich  
 Science and Technology Facilities Council  
 University of Tartu  
 Uppsala University  
 WIGNER Research Centre for Physics  
 Wrocław University of technology  
 Warsaw University of Technology  
 Zurich University of Applied Sciences (ZHAW)



# Neutron Instruments

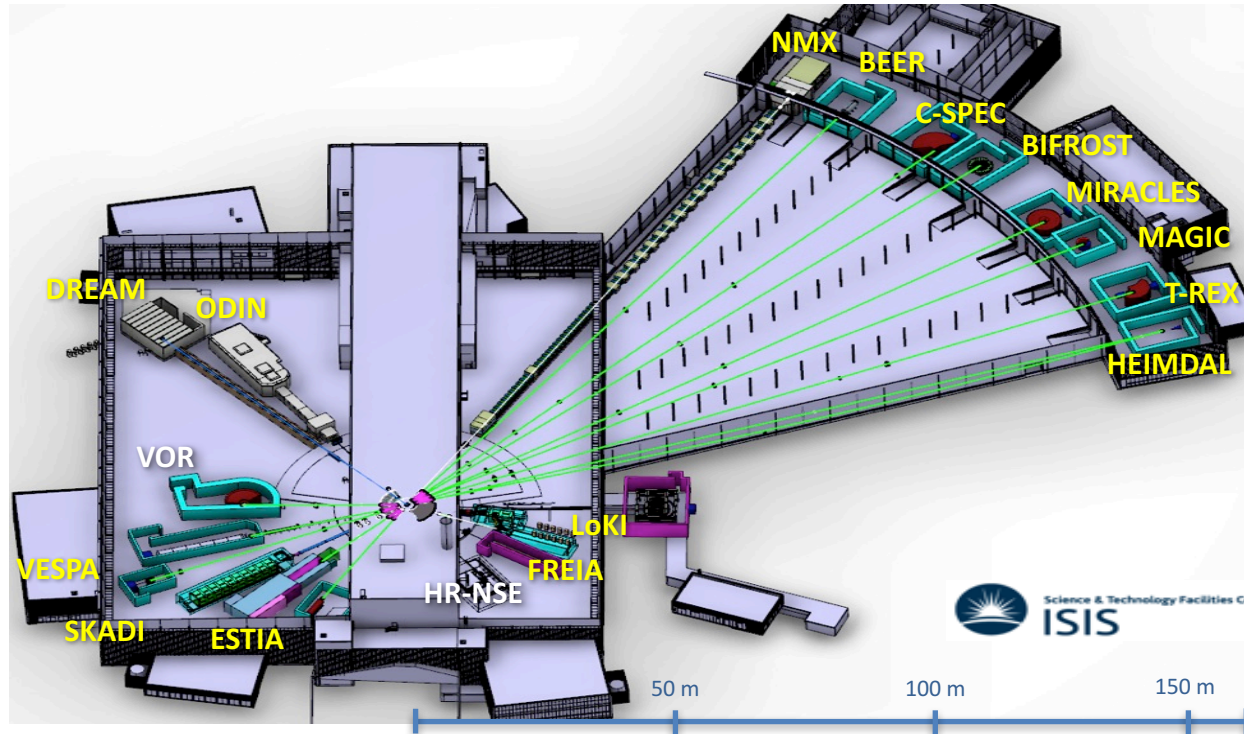
## ESS Lead Partners For Instrument Construction



**Helmholtz-Zentrum  
Geesthacht**  
Zentrum für Material- und Küstenforschung



Technische Universität München



Science & Technology Facilities Council



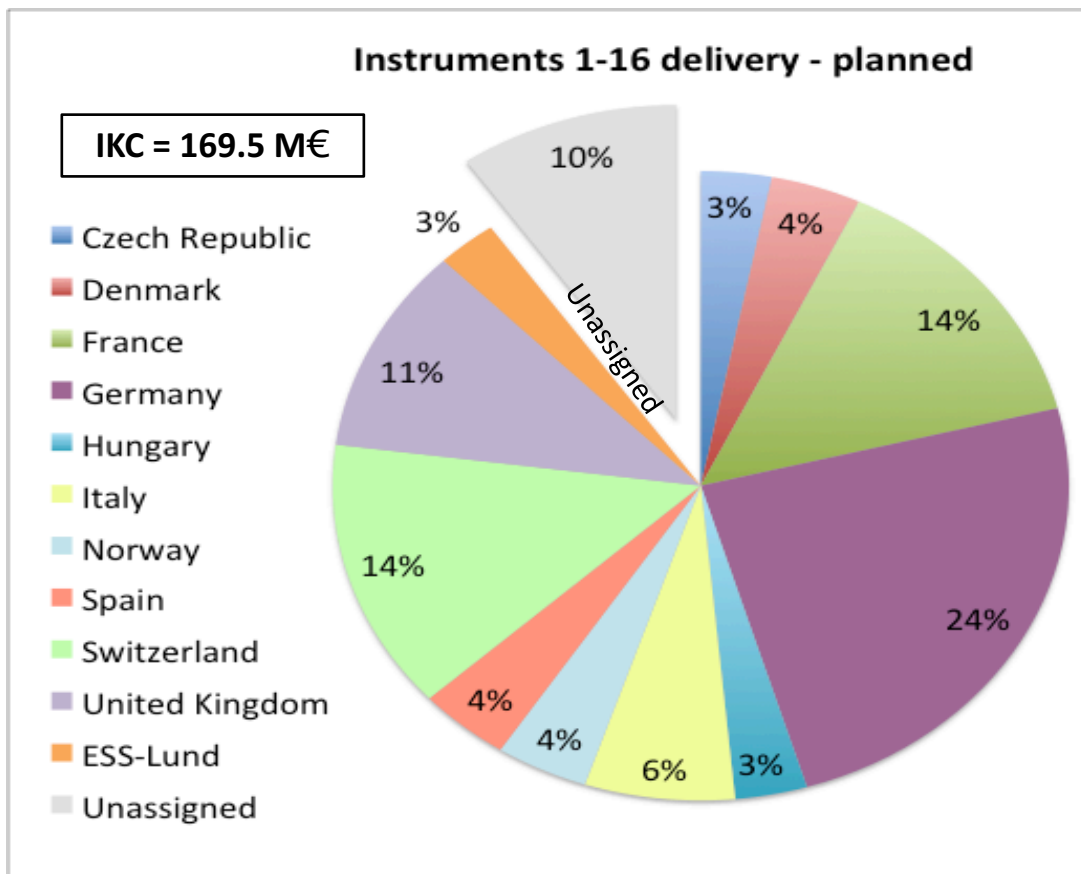
ESS In-Kind Partners also collaborate on sample environment, data systems etc.

# Neutron Instruments by Country

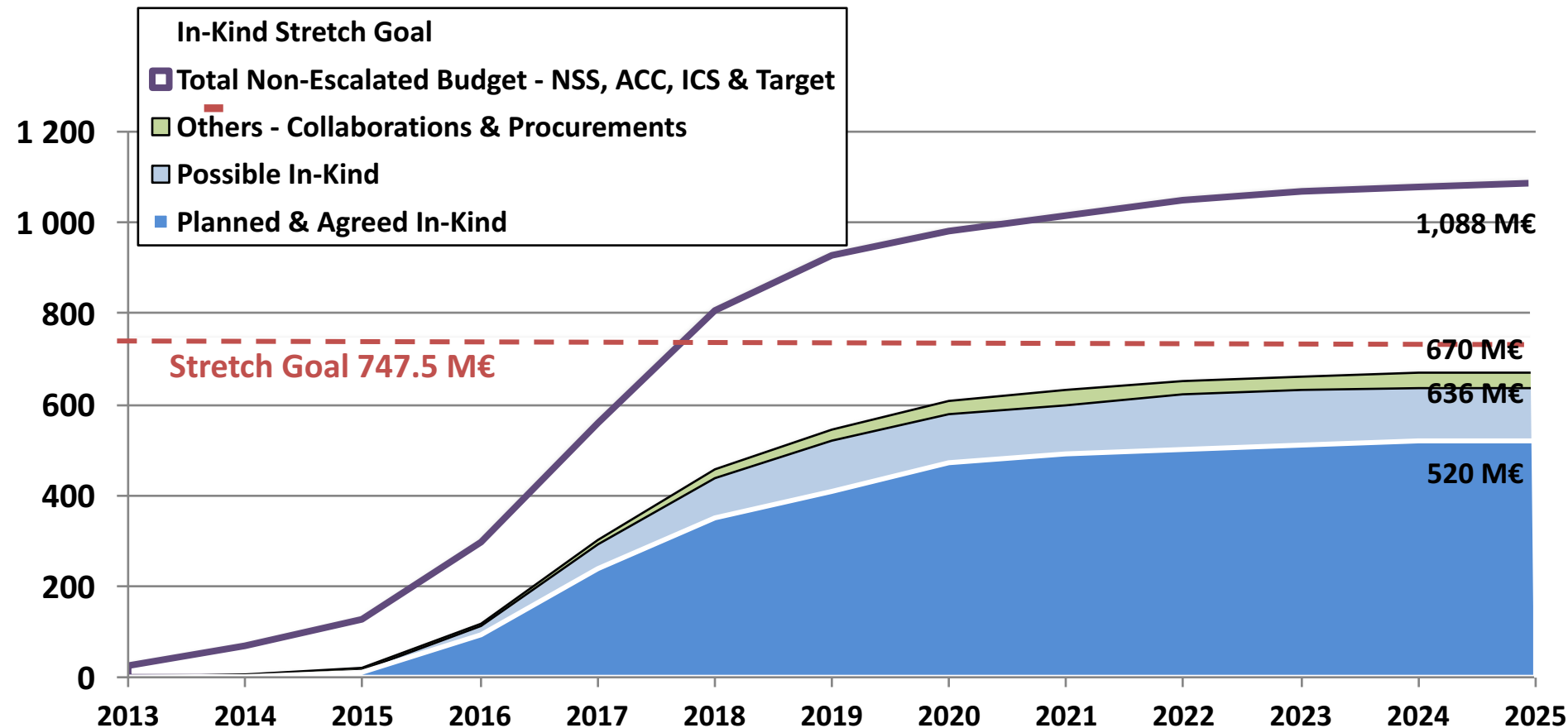
| Partner Country | Commitment to Instruments (M€) | % of Instrument budget |
|-----------------|--------------------------------|------------------------|
| Czech Republic  | 6.0                            | 3.1%                   |
| Denmark         | 7.7                            | 4.0%                   |
| France          | 27.0                           | 14.0%                  |
| Germany         | 47.0                           | 24.3%                  |
| Hungary         | 6.1                            | 3.2%                   |
| Italy           | 12.8                           | 6.6%                   |
| Norway          | 7.8                            | 4.1%                   |
| Spain           | 7.8                            | 4.0%                   |
| Switzerland     | 26.9                           | 13.9%                  |
| United Kingdom  | 20.5                           | 10.6%                  |
| ESS-Lund        | 5.1                            | 2.6%                   |
| Unassigned      | 18.7                           | 9.7%                   |
| <b>total</b>    | <b>193.3</b>                   | <b>100%</b>            |

## Main unassigned scope

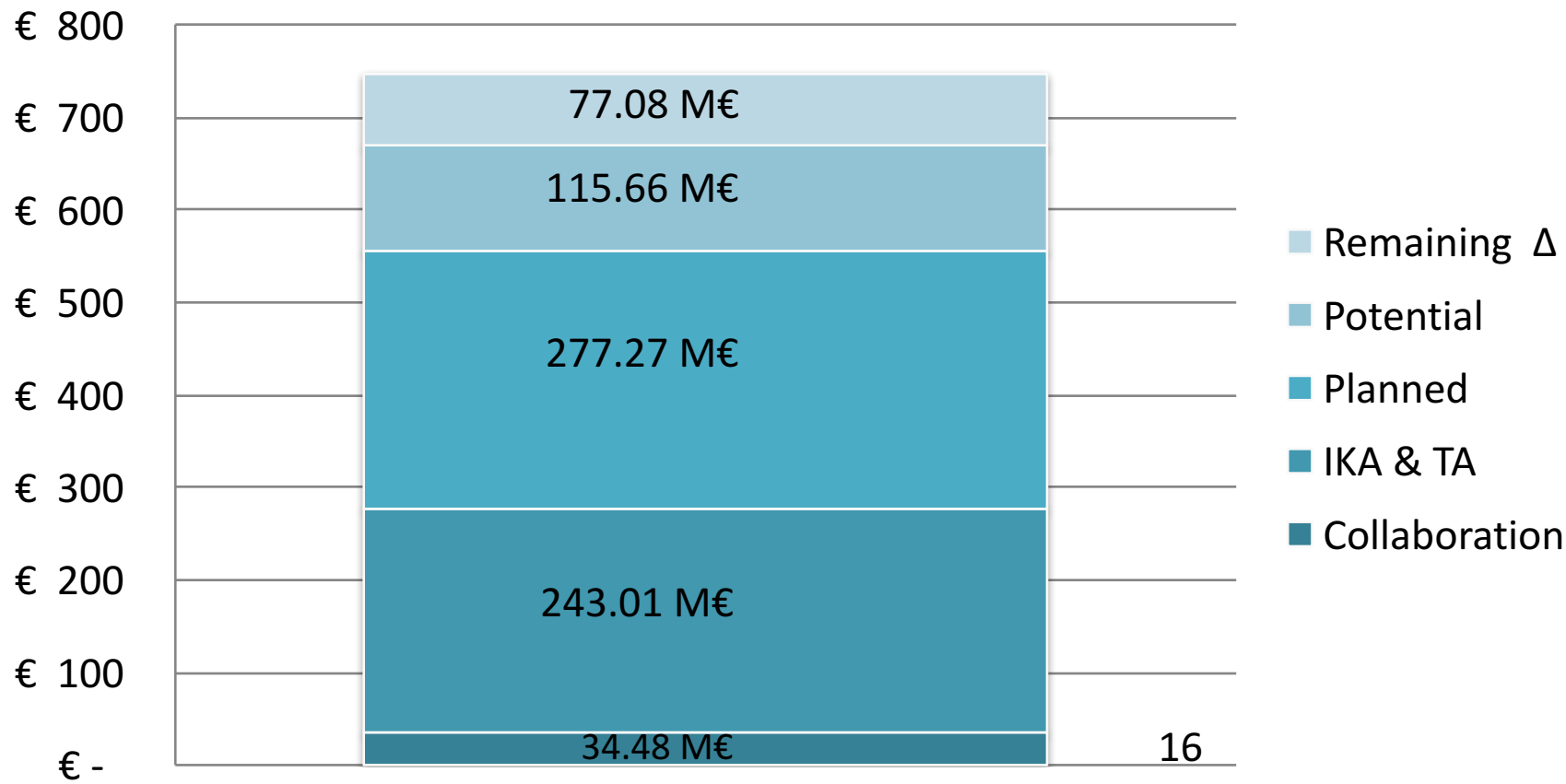
- 16<sup>th</sup> Instrument (6<sup>th</sup> Spectrometer)
- 25% each of VESPA & MIRACLES
- 6% of NMX



# In-kind Status

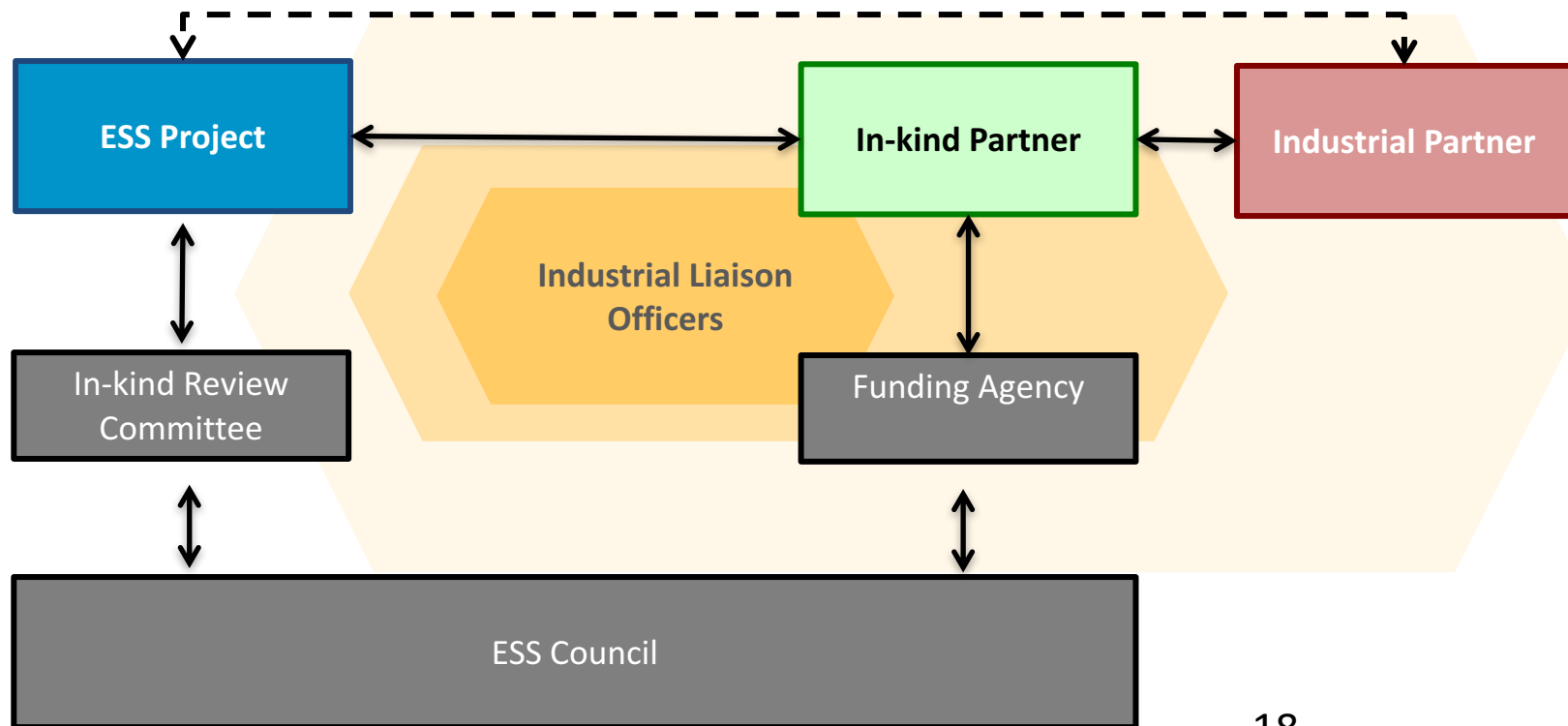


# In-Kind Breakdown



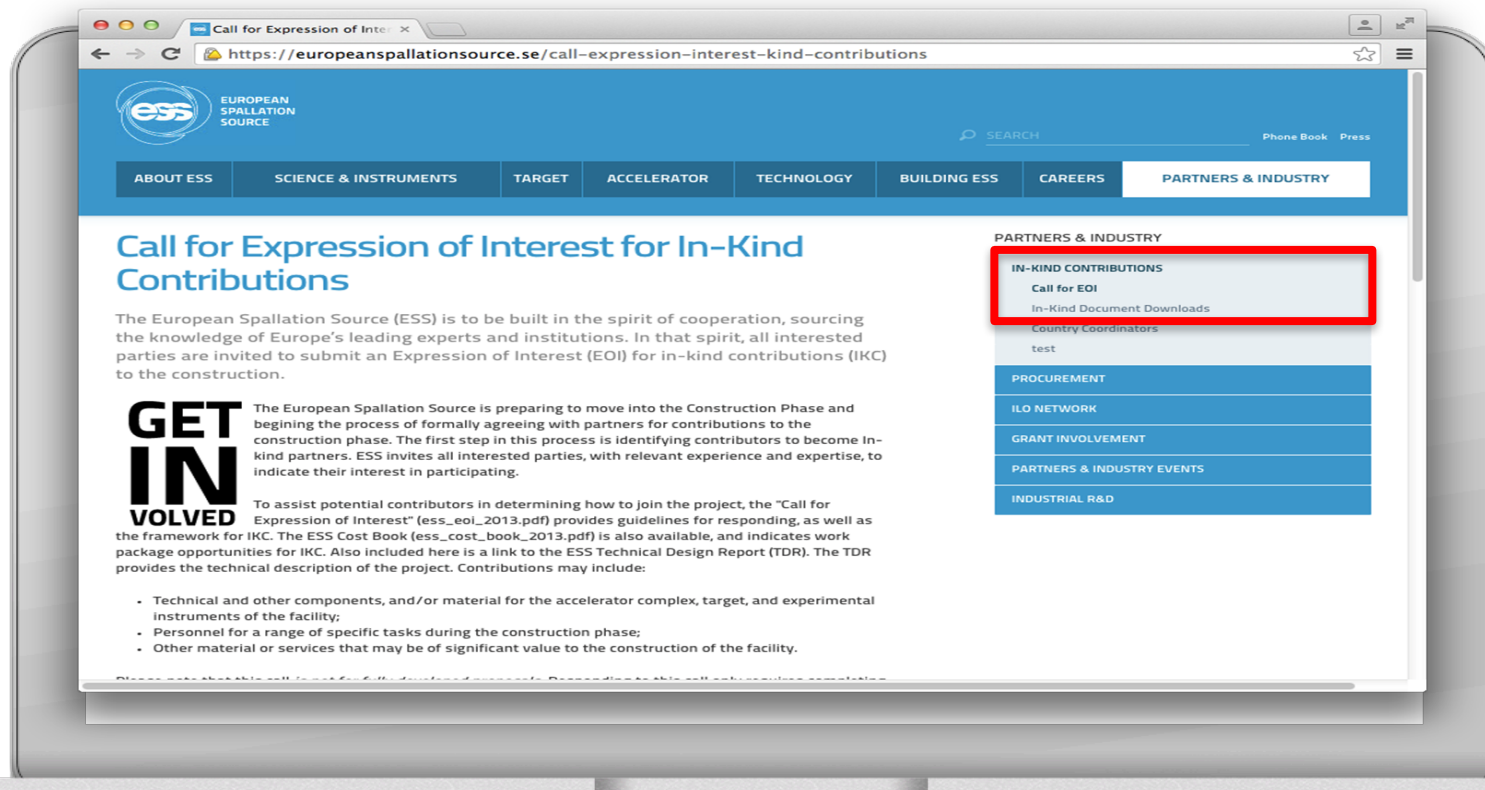
# In-Kind Contributions (IKC) Status

- The total value of IK scope signed with Partners (HoA, Technical Annex, IKA) is 293 M€ based on a potential of 670M€
- Good progress since Spring finalising In-Kind Main Agreements
- Some projects and countries are close to achieving their IKC goals
- It's clear that Members are taking steps to prepare funding for IKC Partners
- Most of Accelerator and Target IK work is agreed and signed with partners; majority of partnerships are already in implementation phase
- Partner selection and scope setting for planned Instrument Suite is completed. Phase 1 preliminary design agreements are being finalized
- Further definition of IK potential scope is on-going at ICS

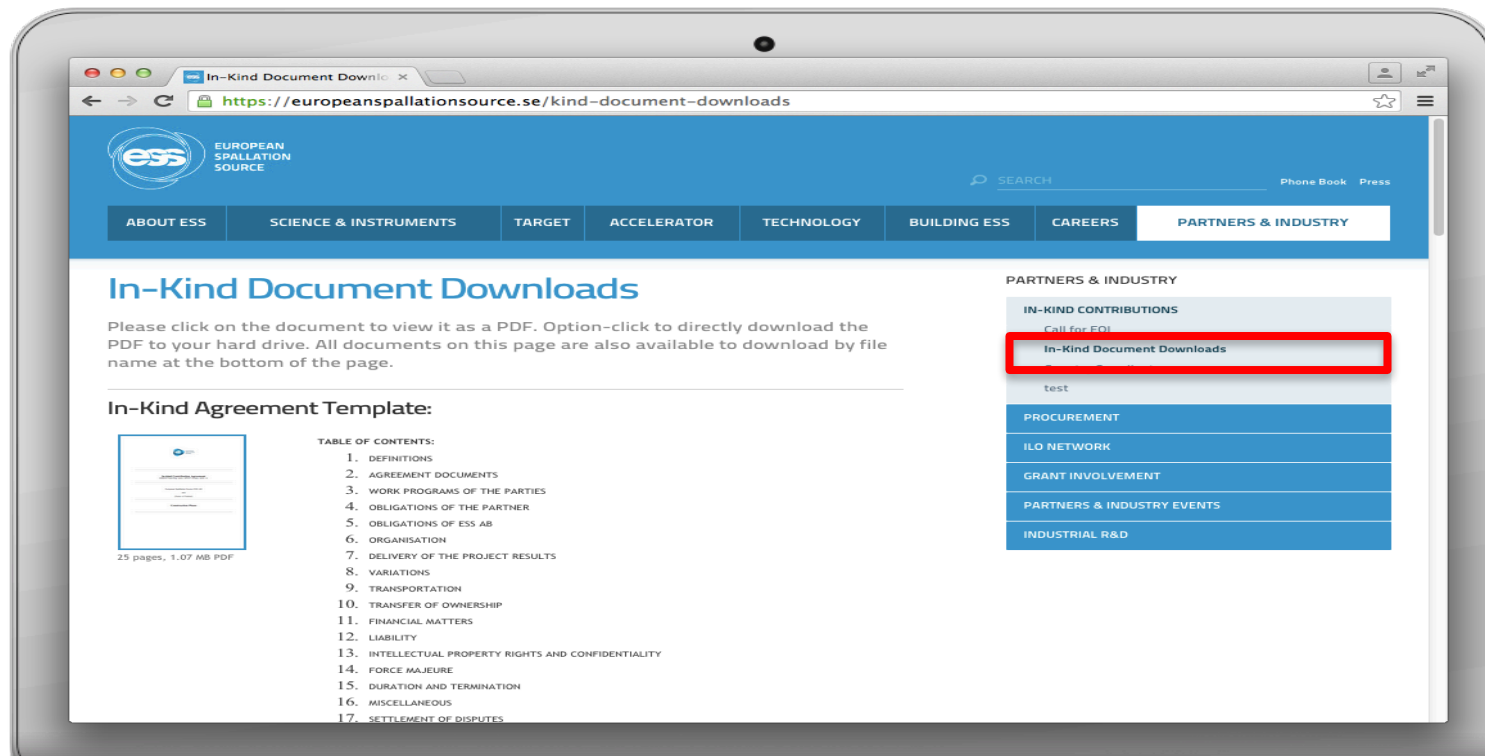


- Potential in-kind contributions are defined by the ESS Programme Plan
- Values based on ESS Cost Book
- Each contract to follow the approved template + technical annex
- The delivering party is responsible for the contribution (technical, financial)
- In-Kind Review Committee to evaluate all IKC agreement proposals
- ESS Council to approve all in-kind contracts
- Based on final evaluation the Member Country gets accredited the value of the In-Kind Contribution

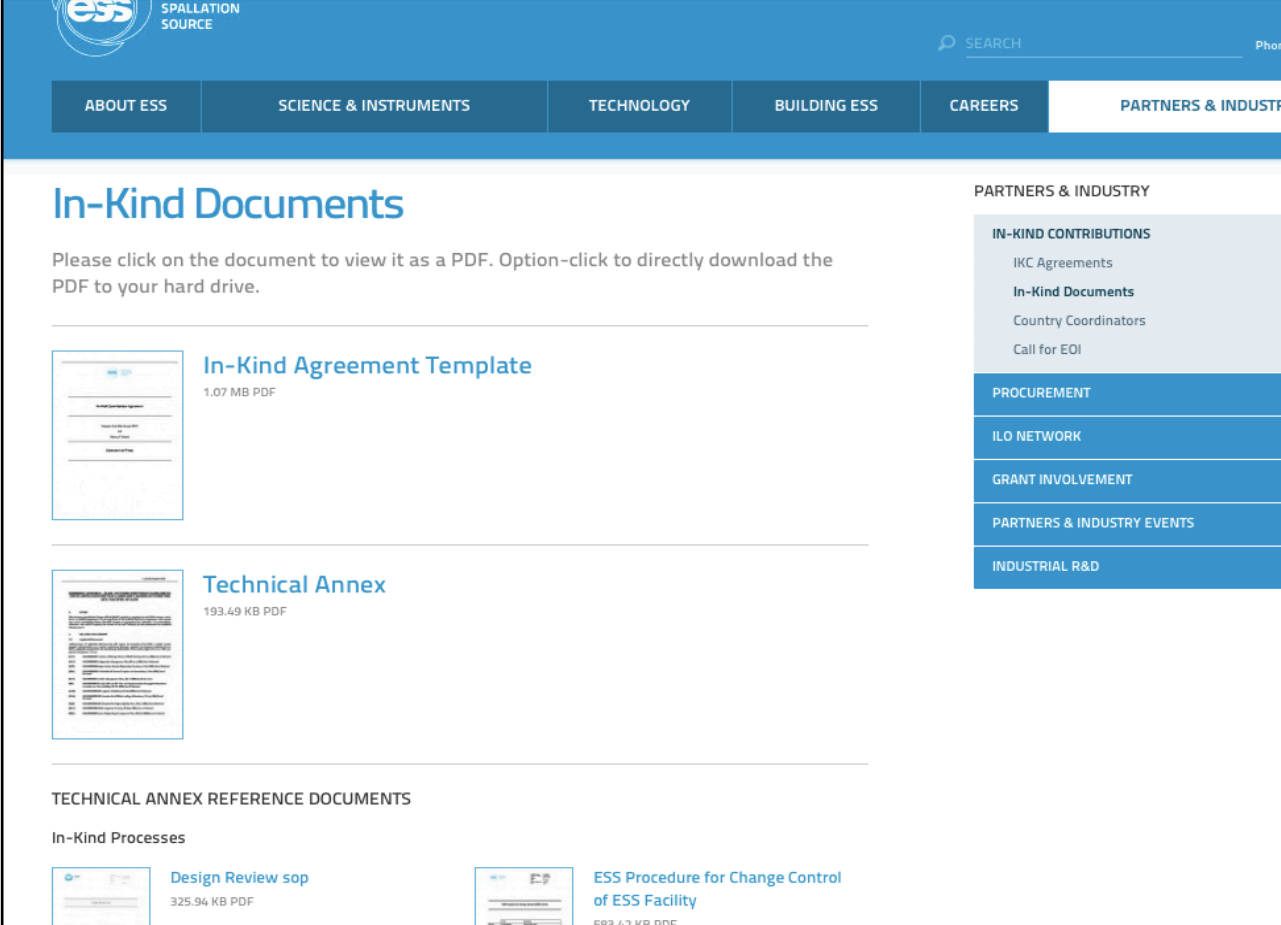
# How Partners “Get Involved”?







- In-Kind Contribution Agreement
- Technical Annex
- Reference & Applicable Documents



The screenshot displays the ESS (European Spallation Source) website. The top navigation bar includes the ESS logo and the text 'SPALLATION SOURCE'. A search bar is located on the right. The main navigation menu contains links for 'ABOUT ESS', 'SCIENCE & INSTRUMENTS', 'TECHNOLOGY', 'BUILDING ESS', 'CAREERS', and 'PARTNERS & INDUSTRY'. The 'PARTNERS & INDUSTRY' section is expanded, showing a sidebar with links: 'IN-KIND CONTRIBUTIONS' (which includes 'IKC Agreements', 'In-Kind Documents', 'Country Coordinators', and 'Call for EOI'), 'PROCUREMENT', 'ILO NETWORK', 'GRANT INVOLVEMENT', 'PARTNERS & INDUSTRY EVENTS', and 'INDUSTRIAL R&D'.

The main content area is titled 'In-Kind Documents'. It includes a sub-header 'In-Kind Documents' and a paragraph: 'Please click on the document to view it as a PDF. Option-click to directly download the PDF to your hard drive.' Below this, there are two document listings:

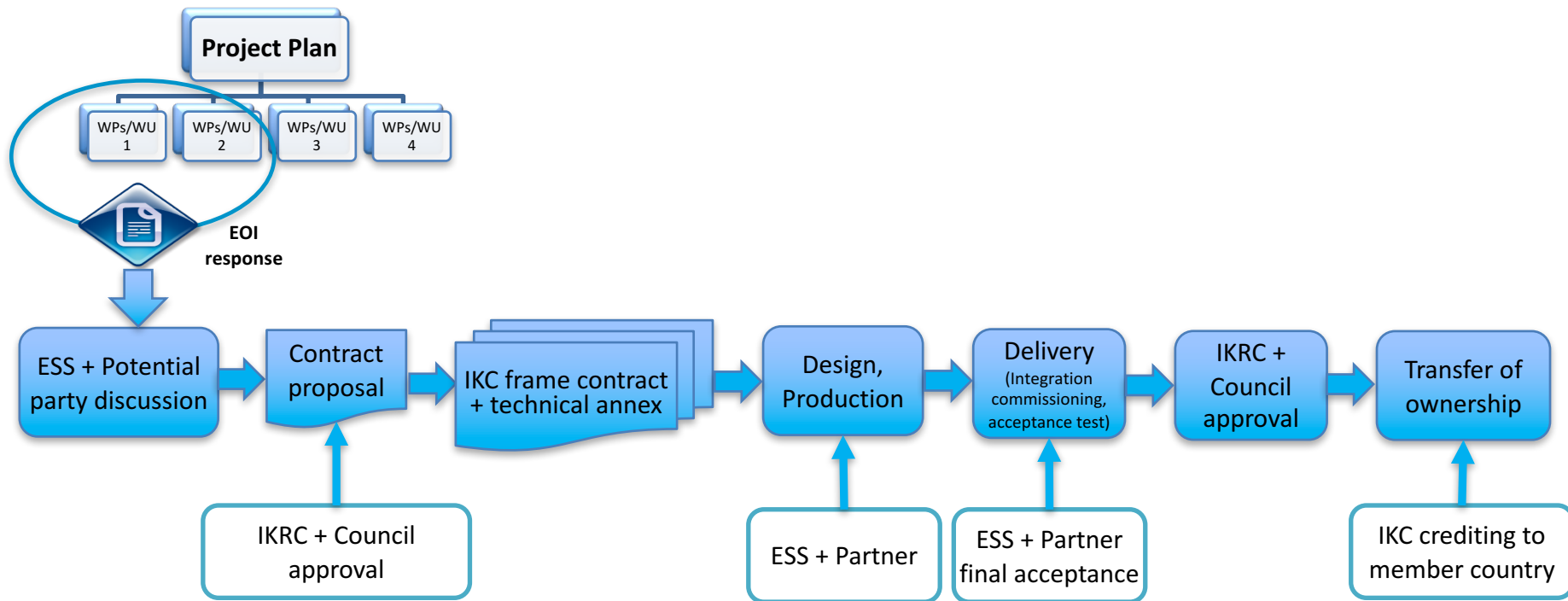
- In-Kind Agreement Template**: 1.07 MB PDF. The thumbnail shows a document titled 'In-Kind Contribution Agreement'.
- Technical Annex**: 193.49 KB PDF. The thumbnail shows a document titled 'Technical Annex'.

Below these listings, there is a section titled 'TECHNICAL ANNEX REFERENCE DOCUMENTS' with a sub-header 'In-Kind Processes'. This section shows the beginning of two more document listings:

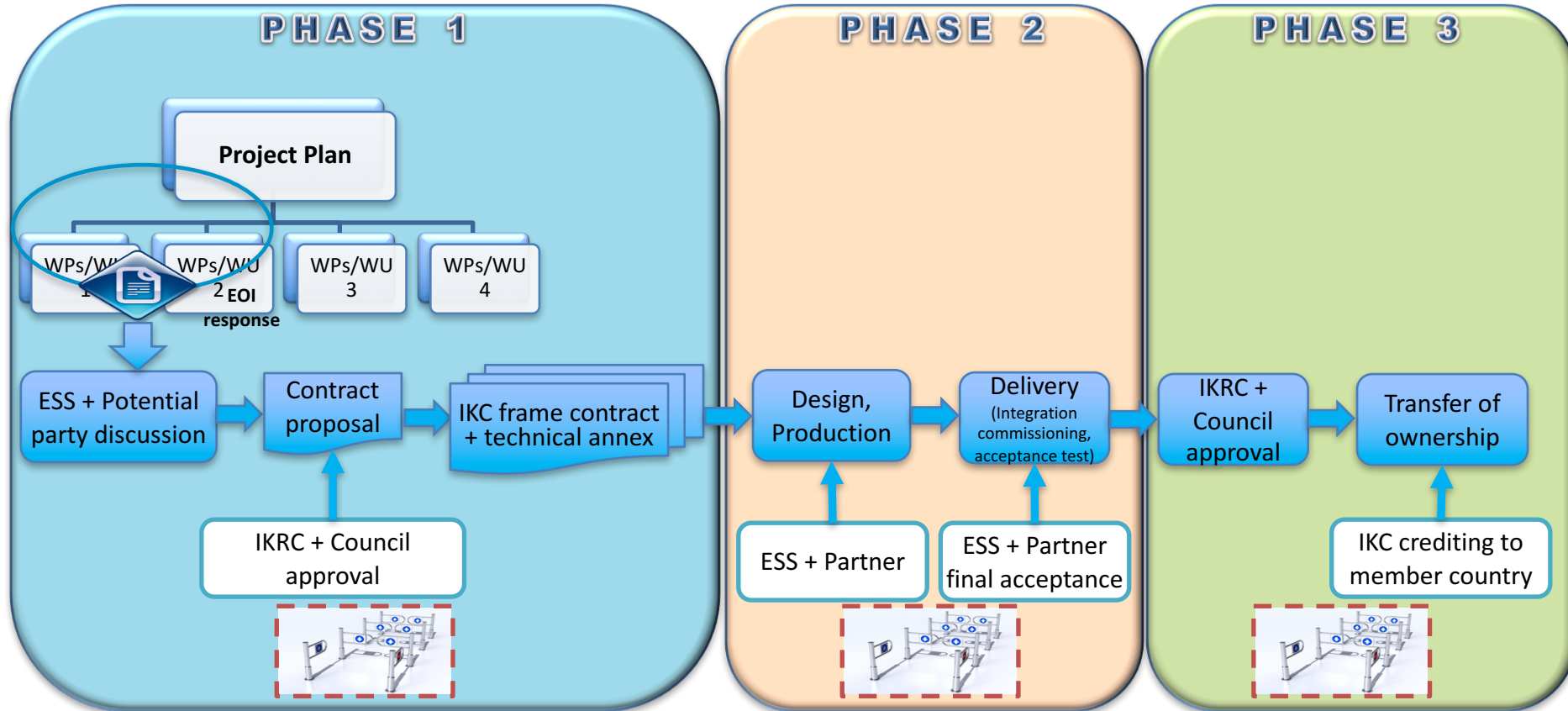
- Design Review sop**: 325.94 KB PDF. The thumbnail shows a document titled 'Design Review sop'.
- ESS Procedure for Change Control of ESS Facility**: 692.62 KB PDF. The thumbnail shows a document titled 'ESS Procedure for Change Control of ESS Facility'.

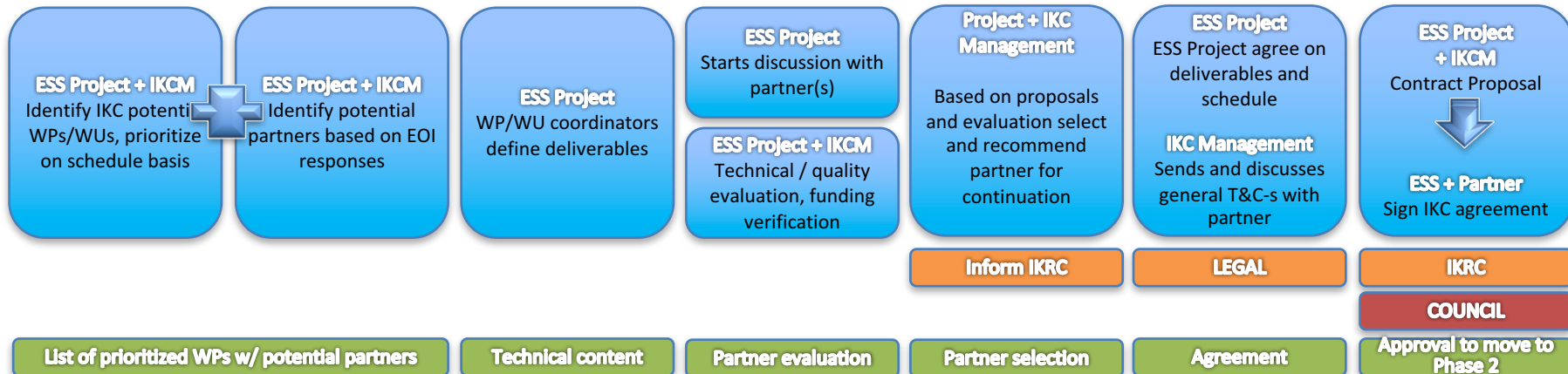
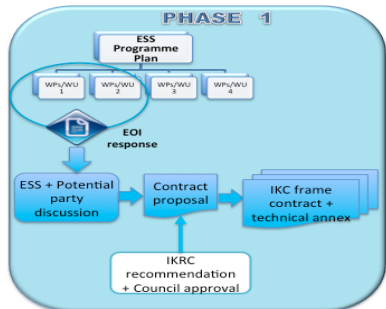
- Template approved in July 2013 by the Steering Committee (following recommendation on agreed version by the AFC)
- Seventeen (17) In Kind Contribution Agreements based on the AFC template signed to date
- All Partners have accepted the template
- We have worked with Partners to address specific issues using the Technical Annexes

# In-Kind Process



# In-Kind Process





# Selection Criteria

|                |  |   |
|----------------|--|---|
| <b>GENERAL</b> | Funding available                                | <b>YES<br/>NO</b>   |
|                | Ready to sign IKC agreement (vs HoA)             | <b>IKC Agreement<br/>HoA<br/>Work can not start STM</b>             |
|                | Supply chain management/Procurement capabilities | <b>Organization in place<br/>Managed ad hoc<br/>No experience</b>   |
|                | Sustainable material selection process           | <b>Formal process in place<br/>Can be applied<br/>Rejected</b>      |
|                | Quality Management System in place               | <b>Formal process in place<br/>Managed ad hoc<br/>No experience</b> |
|                | Risk management in place                         | <b>Formal process in place<br/>Managed ad hoc<br/>No experience</b> |
|                | ESS IKC Agreement terms and conditions accepted  | <b>YES<br/>NO</b>   |

|                  |  |                               |
|------------------|--|-------------------------------|
| <b>TECHNICAL</b> | Technical baseline accepted                              | <b>YES<br/>NO</b>             |
|                  | Cost Book value accepted                                 | <b>YES<br/>NO</b>             |
|                  | <b>ESS Programme Schedule accepted</b>                   | <b>YES<br/>NO</b>             |
|                  | Resources available                                      | <b>YES<br/>NO</b>             |
|                  | Past experience, references                              | <b>Sufficient<br/>Limited</b> |
|                  | Ready to take complete WP                                | <b>YES<br/>NO</b>             |
|                  | Involvement in ESS pre-construction/ experience with ESS | <b>YES<br/>NO</b>             |

**Funding available**
**YES  
NO**
**Cost Book value accepted**
**YES  
NO**
**ESS Programme Schedule  
accepted**
**YES  
NO**

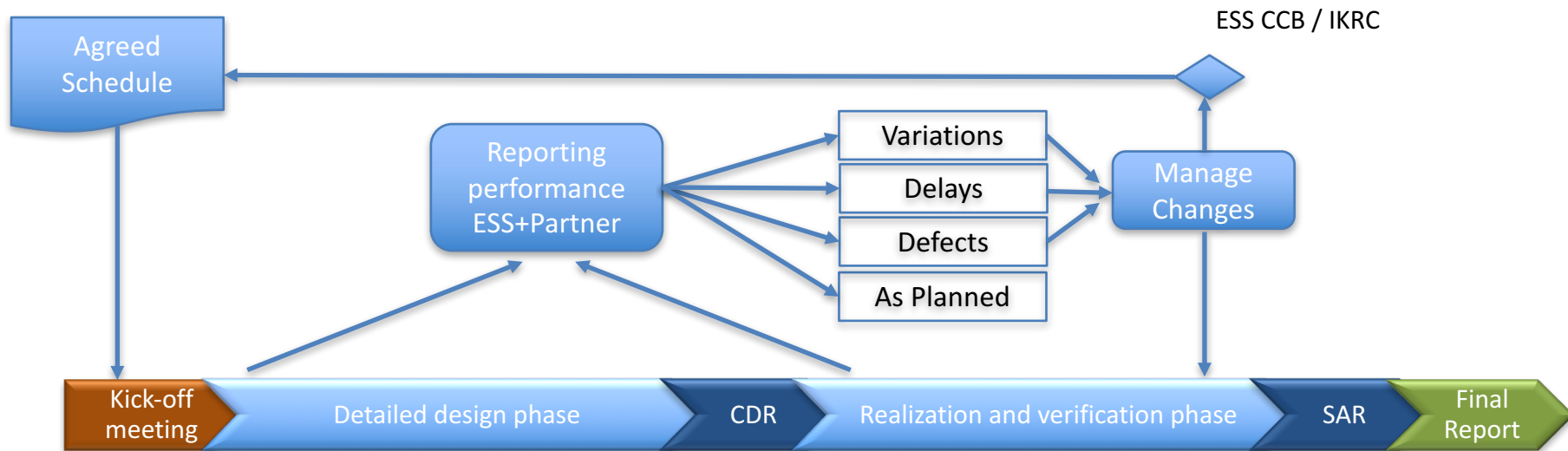
# Phase Two - Implementation



Monitoring  
and tracking

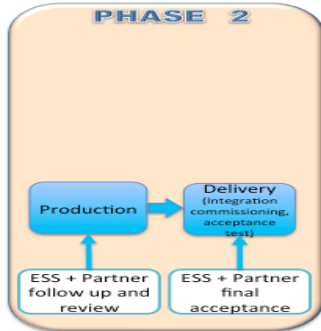
- Schedule
- Technical
- Financial
- Scientific

- Monthly reporting
- Monthly progress meetings
- Analyses
- Approvals
- Reviews
- Meetings/briefings on request





# Phase Two - Implementation



## Change Control

### VARIATIONS

- ESS may request or Partner may propose a Variation
- Change has to be agreed with Partner and go through ESS Change Control
- If required, and upon the recommendation of the IKRC, the Partner may be entitled to compensation for additional costs
- Such compensation may take the form of recognition of in-kind contribution by the Partner's government, following submission to the IKRC and Council

Kick-off  
meeting

Detailed design phase

CDR

Realization and verification phase

SAR

Final  
Report

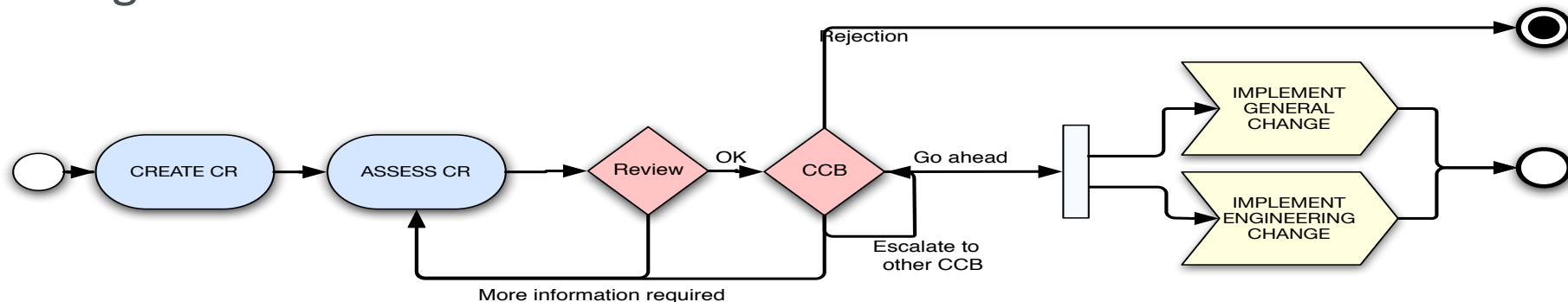


Various levels depending on impact on the

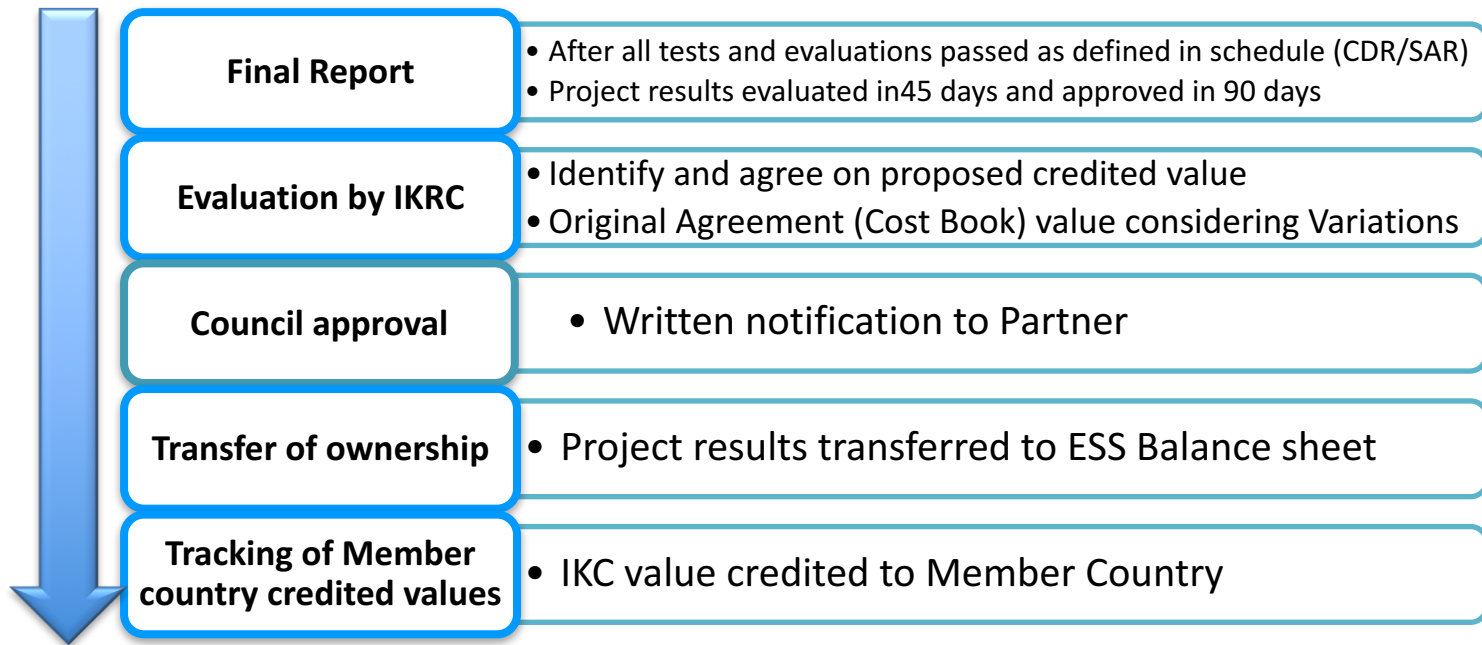
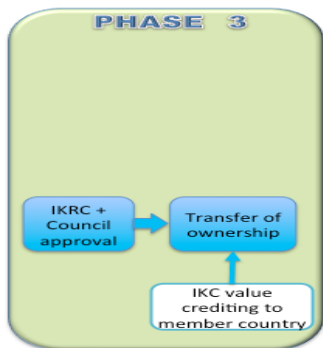
- Technical baseline
- Schedule baseline
- Cost baseline

Changes to the IKC Agreement to be approved by IKRC/Council

## Change Control



# Phase Three –Acceptance



Partner responsible for completeness/correctness limited to 2 yrs

## **Delayed approval/initiation of funding in some member countries prolong signing final IK Agreements**

Potential schedule delay

## **Open IK packages with no partner identified**

Threat of resulting in self performance reducing available cash

- Intensified pursuit of partners (ILO-s, Field coordinators, governance, partner events)

## **VAT not included in Cost Book - some Members lack clarity how to approach this**

Uncertainty causing delays to come to final agreement

- Members may be forced to reduce their contribution levels to compensate

**Accelerator:** 8 WPs (€65 M)  
**NSS:** 4 WPs (> €2.3 M)  
**Target:** 4 WPs (€19M)  
**ICS:** WPs TBD (> €4M)

**Total Value:** > €90M

- If no partner is found work needs to be self performed and procured from cash budget.
- Deadline for decision based on project schedule considering procurement lead times.
- Open IKC Booklet published regularly (new members, partner days, governance, ILOs etc.)

- Close the gap between member country funding commitments and IKC agreements negotiated with partners
  - Need to secure more partners to fulfill complete IK potential scope
  - Finalize remaining IK Main agreements with partners
  - Integrate IK field coordinator organization with Partners and ESS Projects
  - Workshop on standardization (IKC Best practices / Brightness) on 14-15 November
- 
- In-kind agreements are on the critical path – it is essential to finalize majority of IKC agreements with partners in 2016 to avoid delays
  - Approach to VAT still a work in progress in some countries