3. Technology Collaboration Programme

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Polish TCP Co-ordination Day, 23 March 2023

What are the Technology Collaboration Programmes?

- The Technology Collaboration Programme (TCP) mechanism was established in 1975, known prior to 2016 as "Implementing Agreements"

- Established by 2 or more IEA member countries to carry out collaborative activities

- Independent, international groups of experts that enable governments and industries from around the world to lead programmes and projects on a wide range of energy technologies and related issues

- Activities include research, development and demonstration (RD&D), analysis, dissemination, knowledge sharing and scientific exchange

- The TCPs are established under a framework created by the IEA, but they are functionally and legally autonomous

39 TCPs operating today

Cross-cutting activities (2)
- Energy Technology Systems Analysis (modelling)
- Equality in Energy Transitions

Buildings (6)
- Buildings and Communities
- District Heating & Cooling
- Decarbonization of Cities & Communities
- Energy Efficient End-use Equipment
- Energy Storage
- Heat Pumping Technologies

Industry (1)
- Industrial Technologies & Systems

Electricity (3)
- Smart Grids
- High-Temperature Superconductivity
- User-Centred Energy Systems

Transport (5)
- Advanced Fuel Cells
- Advanced Motor Fuels
- Advanced Materials for Transportation
- Clean and Efficient Combustion
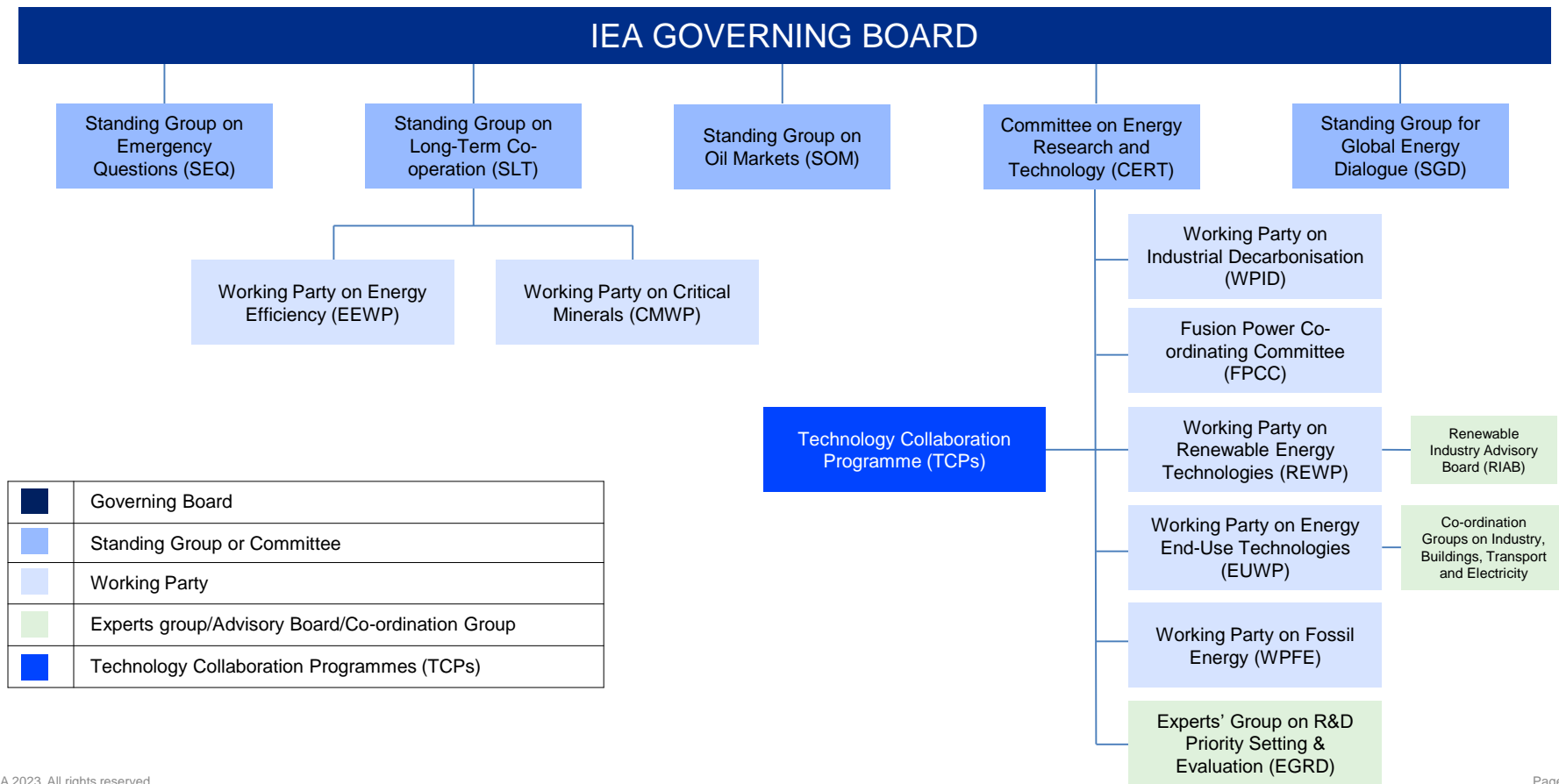- Hybrid & Electric Vehicles

Fusion power (8)

Fossil energy (5)
- Greenhouse Gas R&D
- Enhanced Oil Recovery
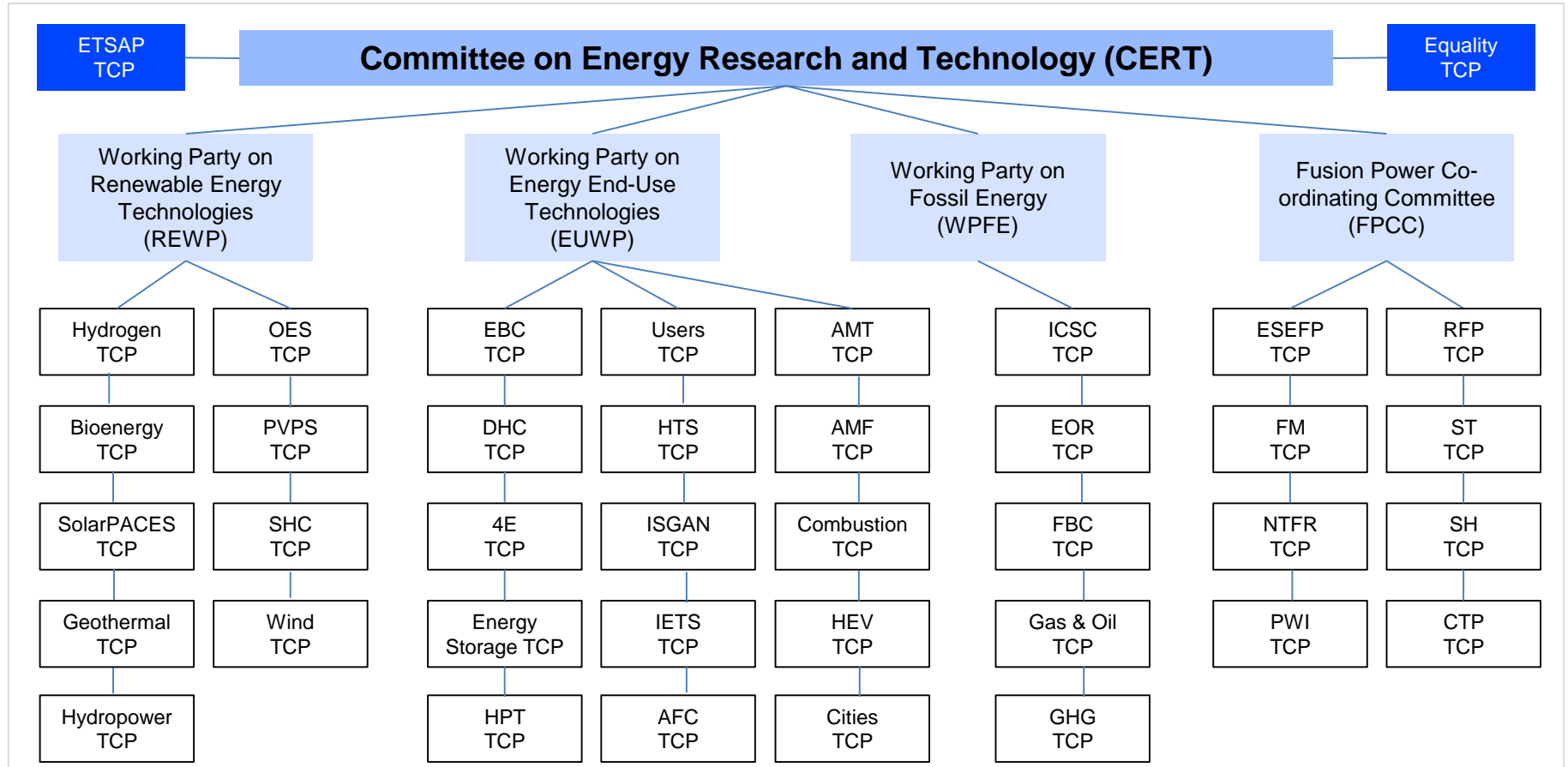- Fluidised Bed Conversion
- Sustainable Carbon
- Gas and Oil

Renewable energy (9)
- Bioenergy
- Hydrogen
- Hydropower
- Concentrated Solar Power
- Ocean Energy
- Geothermal
- Solar Heating & Cooling
- Photovoltaic Power Systems
- Wind

Governance

IEA GOVERNING BOARD

Standing Group on Emergency Questions (SEQ)

Standing Group on Long-Term Co-operation (SLT)

Standing Group on Oil Markets (SOM)

Committee on Energy Research and Technology (CERT)

Standing Group for Global Energy Dialogue (SGD)

Working Party on Energy Efficiency (EEWP)

Working Party on Critical Minerals (CMWP)

Working Party on Industrial Decarbonisation (WPID)

Fusion Power Co-ordinating Committee (FPCC)

Technology Collaboration Programme (TCPs)

Working Party on Renewable Energy Technologies (REWP)

Renewable Industry Advisory Board (RIAB)

Working Party on Energy End-Use Technologies (EUWP)

Co-ordination Groups on Industry, Buildings, Transport and Electricity

Working Party on Fossil Energy (WPFE)

Experts' Group on R&D Priority Setting & Evaluation (EGRD)

■	Governing Board
■	Standing Group or Committee
■	Working Party
■	Experts group/Advisory Board/Co-ordination Group
■	Technology Collaboration Programmes (TCPs)

CERT Structure

Committee on Energy Research and Technology (CERT)

ETSAP TCP

Equality TCP

Working Party on Renewable Energy Technologies (REWP)

Hydrogen TCP	OES TCP
Bioenergy TCP	PVPS TCP
SolarPACES TCP	SHC TCP
Geothermal TCP	Wind TCP
Hydropower TCP	

Working Party on Energy End-Use Technologies (EUWP)

EBC TCP	Users TCP	AMT TCP
DHC TCP	HTS TCP	AMF TCP
4E TCP	ISGAN TCP	Combustion TCP
Energy Storage TCP	IETS TCP	HEV TCP
HPT TCP	AFC TCP	Cities TCP

Working Party on Fossil Energy (WPFE)

ICSC TCP
EOR TCP
FBC TCP
Gas & Oil TCP
GHG TCP

Fusion Power Co-ordinating Committee (FPCC)

ESEFP TCP	RFP TCP
FM TCP	ST TCP
NTFR TCP	SH TCP
PWI TCP	CTP TCP

What is the relationship between the TCPs and the IEA?

IEA Secretariat
- Facilitates substantive interaction with TCPs
- Keeps GB/CERT informed about TCPs (& vice versa)
- Advises on legal matters related to IAs

TCP Participants
- Fund and operate TCPs
- Control membership
- Day-to-day management
- Legally responsible for TCPs

Governing Board
- Established TCP framework
- Approves new TCPs
- **CERT** approves *(by delegation)*
- Requests for extension
- Non-OECD Participants
- Sponsors

TCP Roles and Responsibilities

Operating Agents, Secretaries, etc.
- Selected by Members to operate
- Responsible to the collective TCP Membership
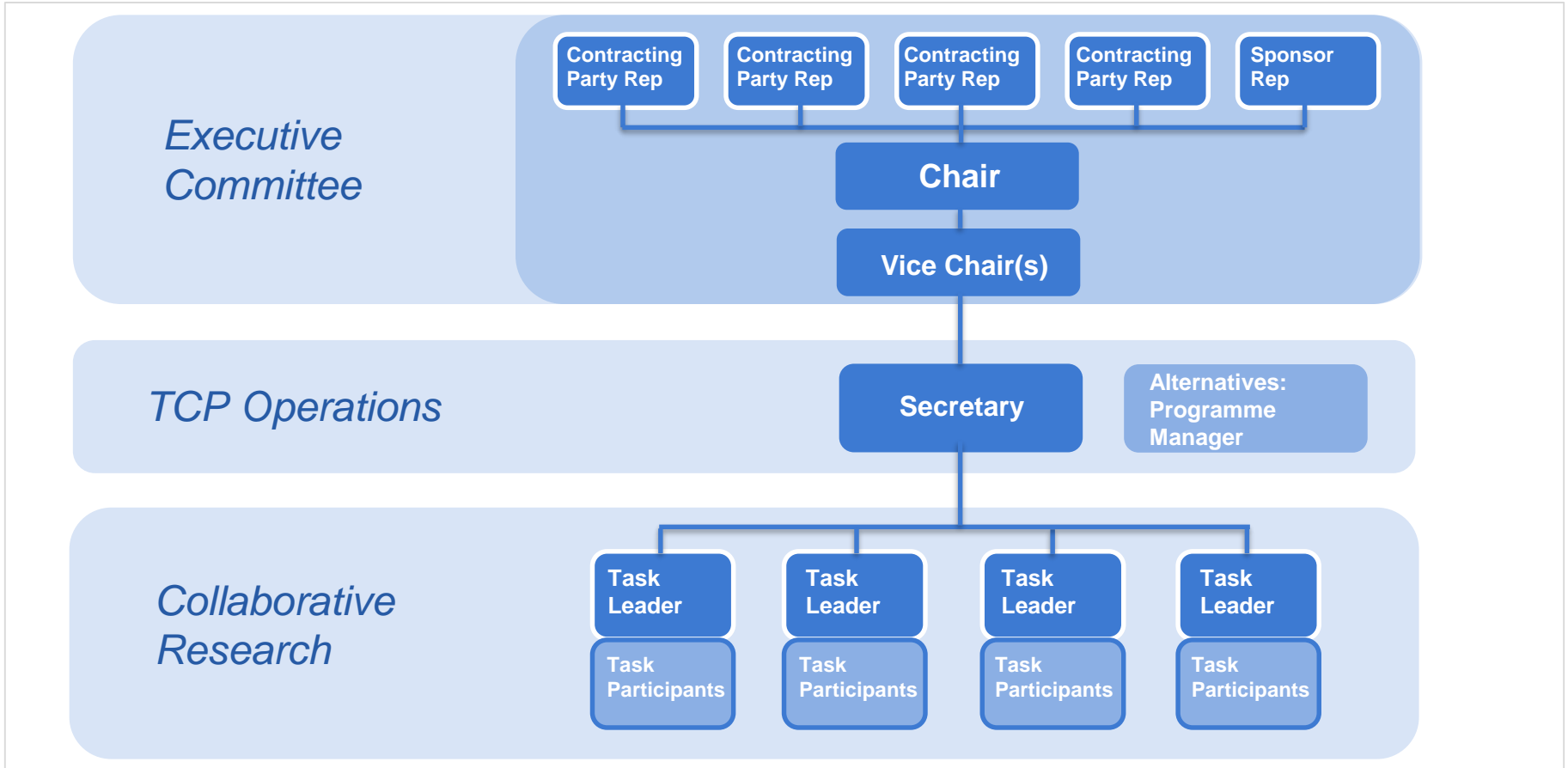- Hold common funds

**The Governing Board created the TCP structure to implement the IEA Treaty.
The TCPs are functionally and legally autonomous from the IEA.**

Each TCP has an independent internal structure

- Each TCP is governed by a unique legally binding **Implementing Agreement**

- Membership structure
  - Only government officials
  - Government plus industry

- Type of work
  - Technology analysis and dissemination
  - Applied research and development
  - Basic or fundamental research

- Task structure
  - Bottom-up programme of work with multiple concurrent Tasks
  - Top-down programme of work with a single "Task"

- Funding structure
  - 100% in-kind support
  - Voluntary fees only
  - Annual common fund contribution
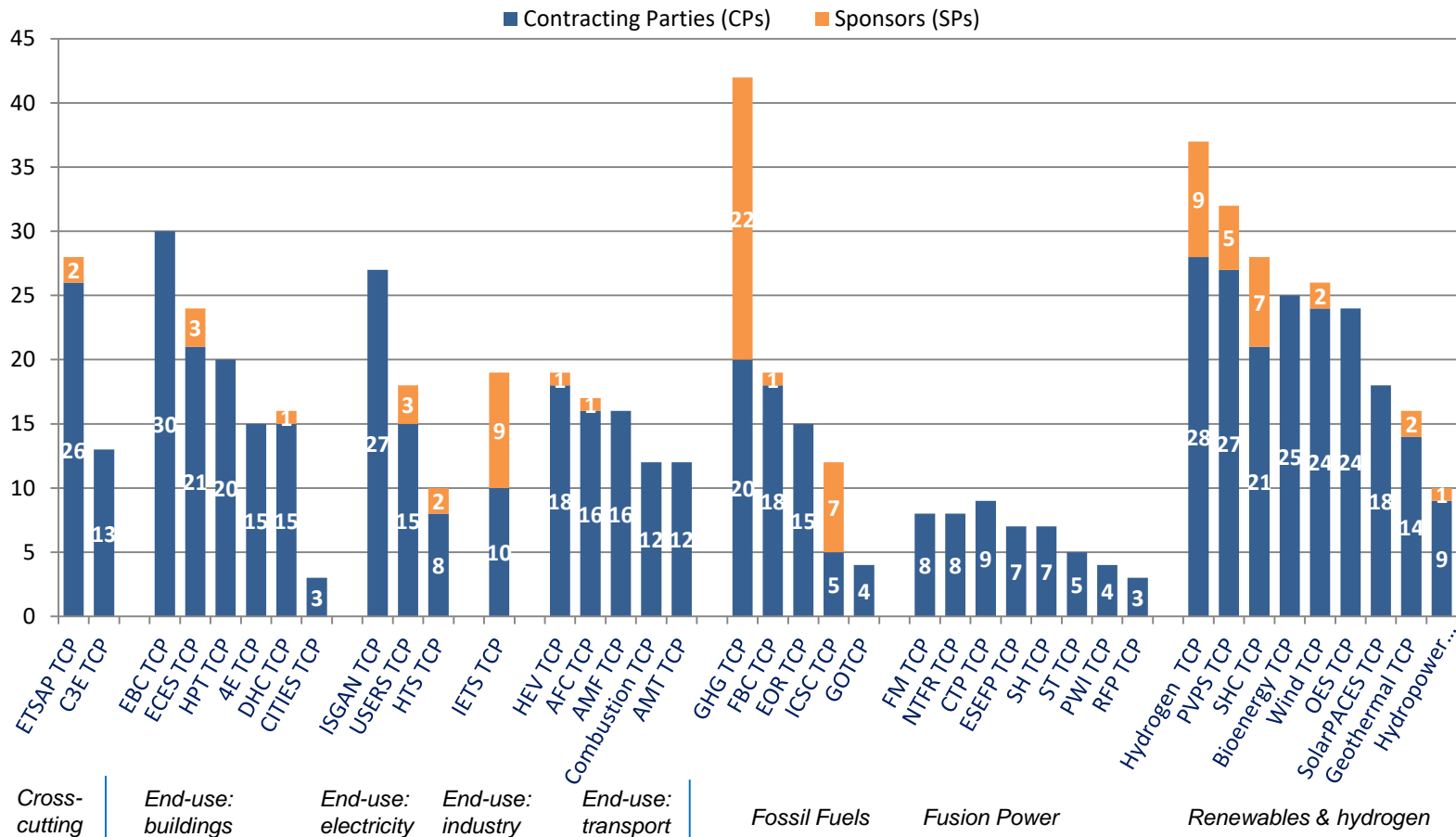 - Annual contribution + task-level contribution

TCP structure – example

Executive Committee

- Contracting Party Rep
- Contracting Party Rep
- Contracting Party Rep
- Contracting Party Rep
- Sponsor Rep

Chair

Vice Chair(s)

TCP Operations

Secretary

Alternatives: Programme Manager

Collaborative Research

- Task Leader — Task Participants
- Task Leader — Task Participants
- Task Leader — Task Participants
- Task Leader — Task Participants

Types of membership

- Under the TCP legal framework, there are **three** types of **Participants:**

  - **Contracting Parties**: Category for governments, international organisations and other entities selected by the government to participate. Open to IEA members and non-members.

  - **Sponsors:** Non-governmental entities, including universities, NGOs, companies (e.g. *GE, VTT*, *ENEL, ExxonMobil, Petrobras, RWE, Shell).* Does not require government approval, but does require prior approval of CERT.

  - **Limited Sponsors:** Non-governmental entities from member, association and accession countries only. Participation does *not* require CERT approval, but must be limited to a single task and 3 years in duration.

Overview of participation at 20 March 2023

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Legend: ■ Contracting Parties (CPs) ■ Sponsors (SPs)

TCP	CPs	SPs
ETSAP TCP	26	2
C3E TCP	13	
EBC TCP	30	
ECES TCP	21	3
HPT TCP	20	
4E TCP	15	
DHC TCP	15	1
CITIES TCP	3	
ISGAN TCP	27	
USERS TCP	15	3
HTS TCP	8	2
IETS TCP	10	9
HEV TCP	18	1
AFC TCP	16	1
AMF TCP	16	
Combustion TCP	12	
AMT TCP	12	
GHG TCP	20	22
FBC TCP	18	1
EOR TCP	15	
ICSC TCP	5	7
GOTCP	4	
FM TCP	8	
NTFR TCP	8	
CTP TCP	9	
ESEFP TCP	7	
SH TCP	7	
ST TCP	5	
PWI TCP	4	
RFP TCP	3	
Hydrogen TCP	28	9
PVPS TCP	27	5
SHC TCP	21	7
Bioenergy TCP	25	
Wind TCP	24	2
OES TCP	24	
SolarPACES TCP	18	
Geothermal TCP	14	2
Hydropower...	9	1

Categories: *Cross-cutting* | *End-use: buildings* | *End-use: electricity* | *End-use: industry* | *End-use: transport* | *Fossil Fuels* | *Fusion Power* | *Renewables & hydrogen*

TCP membership: current participation

Poland currently participates in:

- International Centre for Sustainable Carbon TCP (*Central Mining Institute joined in 2008 as CP*), but no longer an active member

- Fluidised Bed Conversion TCP (*CP, Czestochowa University of Technology joined in 2007 as CP*)

Expanding the global reach of the TCPs

- Target audiences include:
  - Decision makers in prospective member country governments
  - TCPs and other multilateral initiatives e.g. MI, CEM

- The handbook includes:
  - A guide to what TCPs are, how they work in practice, and what the **key benefits of TCP membership** are
  - A compilation of TCP good practice around three themes to help expand the global reach of the TCPs
  - **iea.org/reports/expanding-the-global-reach-of-the-tcps**

Expanding the Global Reach of the TCPs
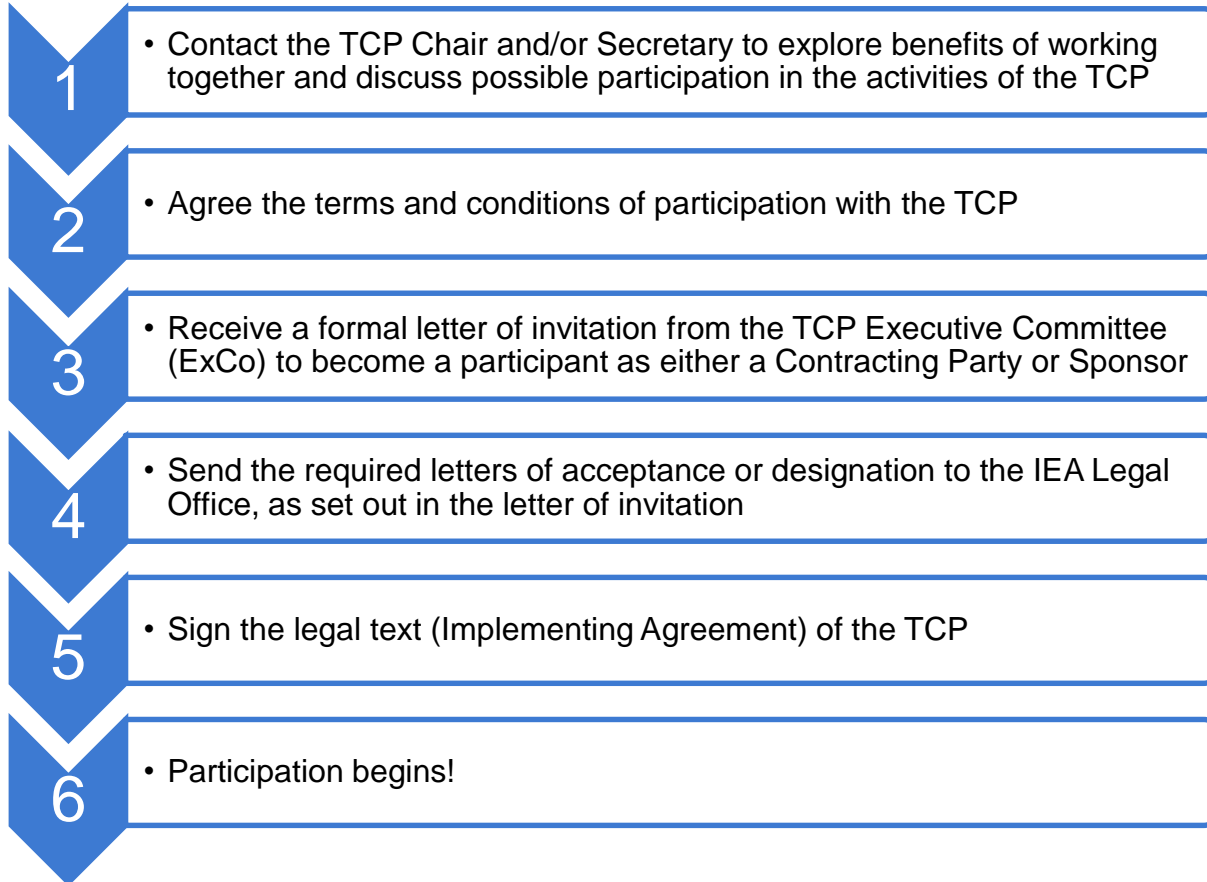
A handbook for TCPs and other clean energy initiatives

International Energy Agency

Highlight • 5 key benefits of TCP membership

1 Gaining access to shared resources for energy innovation

2 Shaping the global energy innovation agenda

3 Identifying opportunities to boost technology development

4 Strengthening domestic innovation capacity and expanding knowledge networks

5 Stimulating domestic investment and markets for energy technologies

Highlight • Good practices organised around three core themes

1 Expanding outreach and raising awareness of TCP activities and impact

2 Addressing concerns over resources and the cost of participation in TCP activities

3 Setting up activities aligned with prospective member country priorities
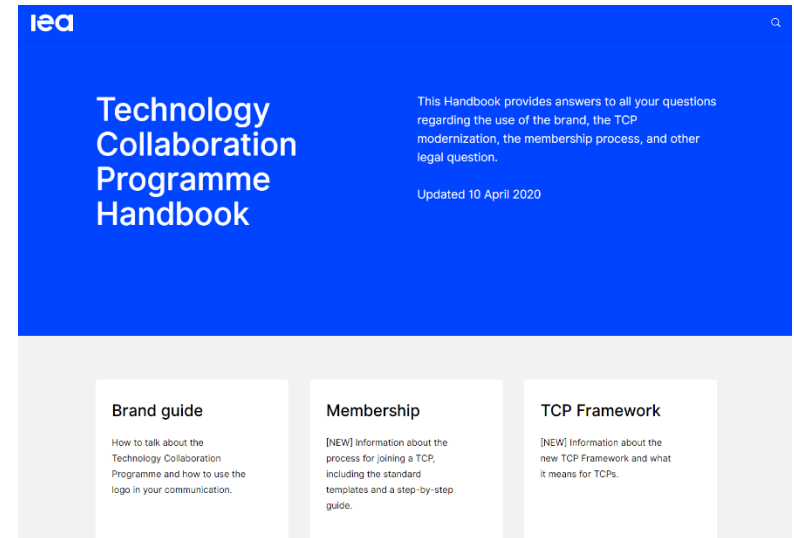
How to join a TCP

1 • Contact the TCP Chair and/or Secretary to explore benefits of working together and discuss possible participation in the activities of the TCP

2 • Agree the terms and conditions of participation with the TCP

3 • Receive a formal letter of invitation from the TCP Executive Committee (ExCo) to become a participant as either a Contracting Party or Sponsor

4 • Send the required letters of acceptance or designation to the IEA Legal Office, as set out in the letter of invitation

5 • Sign the legal text (Implementing Agreement) of the TCP

6 • Participation begins!

Online resources

- TCP Online Guide
  - Covers membership process, TCP Framework, Executive Committees, etc.
  - **tcp-guide.iea.org**

- TCP overview and links to individual websites
  - **iea.org/about/technology-collaboration**