

# World Energy Resources

## Terms of Reference, 2013 – 2016

### A. Introduction, overall aim and mission of WER activities

The World Energy Resources (WER) is the most-established World Energy Council (WEC) flagship, delivering publications which are authoritative and unique in their scope, both in terms of individual energy resources and the geographical coverage. With over 3 million downloads per year, it is the most well-known, sought after service provided by WEC. For over 80 years this highly regarded publication has been a reference tool for governments, industry, investors, IGOs, NGOs, academia and the general public.

WER has been releasing its main publication, in printed form, since 1936. Under the title of “Statistical Year-Book of the World Power Conference”, it was the first authoritative compilation of facts regarding national organisation of standardisation in 25 countries. Further iterations included “Survey of Energy Resources” in 2004, which was the final year of the printed variant. WEC website became the main channel of distribution, containing data and reports from 2001. “World Energy Resources: 2013 Survey”, the 23<sup>rd</sup> edition was published during the 22<sup>nd</sup> World Energy Congress in Daegu, Korea (Rep. of), October 2013 and encompassed data for all WEC member countries with additional data from other respectable sources.

The World Energy Resources 2013 report covers 15 energy resources, including fossil, renewables, nuclear, peat and other sources, with national assessment for the WEC’s member countries. In addition perspectives on energy efficient technologies and policies are presented.

This statistical report presents values for reserves and production of various resources at the global level, and by country and region. The WER Study Group and its 13 knowledge networks collect and analyse data on specific resources and reserves. In addition to resource data the report also assesses current and emerging technologies, to provide a solid basis for energy policy and decision-making.

### B. Objectives

Starting from 2013, World Energy Resources (WER) flagship is to be the main supplier of resource data and technology information to World Energy Scenarios (WES), World Energy Trilemma and other WEC studies and projects. The bottom-up production and top-down dissemination of the report will enhance the quality and increase WER visibility amongst the decision-makers, who are the key WES customers.

The complementary objectives are to:

- a. **Support all WEC flagships with aligned, quality, up-to-date data** by providing a structured and efficient data collection, collation, and interpolation procedures. Alas, simplify collection procedure for MCs, to encourage greater participation, while ensuring high quality of necessary data.
- b. **Aim to improve the data update period** by facilitating an annual refresh cycle, allowing WER to carry more robust, competitive data. Develop a standard procedure for transfer of major changes emanating from the data update to other WEC flagships and projects.

- c. **Introduce energy units conversion facility** to enable direct comparison between different energy resources by using Joules (J) as the standard unit for energy.
- d. **Locate, engage and develop partnerships and sponsorships**, which implies the ability to deliver strategic information advantageous to key partners and sponsors.
- e. **Ensure that World Energy Resources data gets used** by landing perspectives and survey on decision makers' tables, and participating in active report dissemination throughout the WEC network.

### **C. Work Programme 2014-2016**

Resource data and information on existing and emerging technologies will be collected and evaluated (Annex B). Resource-specific key facts and data will be contained in deep-dives, otherwise referred to as perspectives, which will be produced as a result of Knowledge Network members' research and are to be published by WEC during key events. Analytical, integrating summaries are the responsibility of the lead author. These will also be based on the work undertaken by the Knowledge Networks. Summaries are to be published in the "World Energy Resources: 2016 Survey" with focus on following:

- Regions
- Technologies
- Resources/Reserves
- Water footprint, land footprint
- Future outlook/Key dynamics
- CO<sub>2</sub>

The overall methodology includes the collection of resources and technologies transfer from publically available sources. The frontloaded approach to data collection, as described in Annex B, will be used to align data required by scenarios, ensuring greater consistency across WEC flagships. WER database will be used as required. The Knowledge Networks will feed information to the Core Team; correspondingly WER will provide any necessary feedback and quantitative data to the Knowledge Networks.

### **D. Modus Operandi**

The WER Study Group consists of the Core Team, which will provide directional oversight and is headed by the Executive Chair of Resources. Moreover, the 13 chapters are to be developed by dedicated Knowledge Networks as outlined in Annex A.

The Core Team will provide the Knowledge Networks with guidance as to the structure of their reports and necessary resource data; facilitate engagement and provide direction. Knowledge Networks will feed their draft reports to the Core Team for conclusions, recommendations and messages. The Core Team is responsible for collation and summarisation of in-depth perspectives to obtain the required integrating summaries.

The Core Team will meet on a regular basis. The Knowledge Networks will organise their work and meetings individually to ensure a timely completion of the deliverables. The Study Group as a whole will meet as appropriate. Meetings will be held physically and / or virtually.

## **E. Roles and Responsibilities**

There are two key bodies that participate in the development of the World Energy Resources reports and subsequent triennial Survey report: 1) the Knowledge Networks and 2) the Core Team, headed by 3) the Executive Chair. Together the two bodies form a Study Group.

### **1. Study Group:**

- a. The Study Group consists of 13 individual Knowledge Networks representative of 13 chapters covered in the WER Survey (See Annex A for detailed breakdown of 13 Knowledge Networks), an Executive Chair and the Core Team.
- b. Each Knowledge Network comprises of 1 lead author, who is to be supported by 3-5 experts. Lead author and experts are to be identified through the nominations process and confirmed by Executive Chair. Number of Knowledge Network representatives remains under Executive Chair's discretion.
- c. The individual lead authors have to ensure fair and ample geographic diversity of their Knowledge Network and must carry expert insight into represented resource.
- d. A Knowledge Network nominee is only considered a member of the Study Group if he / she is a representative of one of the 13 chapters, and is active in the work undertaken in the designated task.
- e. The Study Group members agree to support outreach activities to own stakeholders / network where possible.
- f. The Study Group members will be recognized in the final report.

### **2. The Core Team:**

- a. The Core Team consists of the WEC Secretary General, the Chair of the Studies Committee, the WEC Executive Chair of Resources, the WEC Director of Programmes, a Senior Project Manager and Coordinator.
- b. The Core Team (specifically WEC London Secretariat) is responsible for resource data collection and provision. Thus, WEC London Secretariat will act as a resource database, and will provide Knowledge Networks with any necessary data. The Core Team will gather any such data from the WEC Member Committees and publically available sources. All sources of publically available data will be referenced.
- c. The Core Team will provide information on meetings as well as supporting material in a timely fashion.
- d. The Core Team will engage the WEC Communications Team in the process, and jointly plan and prepare the release of the reports.
- e. The Core Team members will be recognized in the final report.

### **3. The Executive Chair:**

- a. The Executive Chair serves as the preferred public spokesperson of the World Energy Resources.
- b. As the interface between the Studies Committee Chair and the Study Group, the Executive Chair will lead the work of the Study Group within the bounds of the Terms of Reference and is responsible to the Studies Committee Chair for ensuring that the work is completed on time, meets the expectations of the

Studies Committee, ensures an optimal and balanced participation from WEC regions and across energy sectors, is technically robust and credible, is reflective of the work done by the Study Group and is consistent with or shapes the WEC position on the specific subject matter.

- c. The Executive Chair facilitates meetings, considering various cultures and backgrounds and achieving consensus.
- d. The Executive Chair will be recognized in the final report and has the opportunity to provide a foreword to the World Energy Resources report.

## **F. Deliverables**

Required deliverables consist of:

- a. Perspectives on following energy resources:
  - Coal
  - Oil
  - Natural gas
  - Peat
  - Uranium and nuclear
  - Hydro power
  - Bioenergy and waste
  - Wind
  - Solar PV
  - Geothermal
  - Marine energies
  - Energy efficiency
  - Carbon capture, utilisation and storage

Further, a perspective on energy efficient technologies and a further perspective on carbon capture, utilisation and storage – totalling 13 WER perspectives, inclusive of tabulated and graphed data for resources, reserves, production and in the case of coal, oil and natural gas also imports, exports and consumption, where, any/all are appropriate. Each perspective will take a form of a deep-dive and will be produced according to the timeline proposed in Annex C.

- b. Analytical, integrating summaries, which are an abridged version of perspectives, focusing on regions, technologies, resources/reserves, water/land footprint, future outlook/key dynamics, and CO<sub>2</sub>.
- c. Final report, 24<sup>th</sup> publication of “World Energy Resources: 2016 Survey”, consisting of collection of 13 analytical, integrating summaries and tabulated and graphed data which contains resources, reserves, production and in the case of coal, oil and natural gas also imports, exports and consumption, where, any/all are appropriate.

## **G. Team Resources**

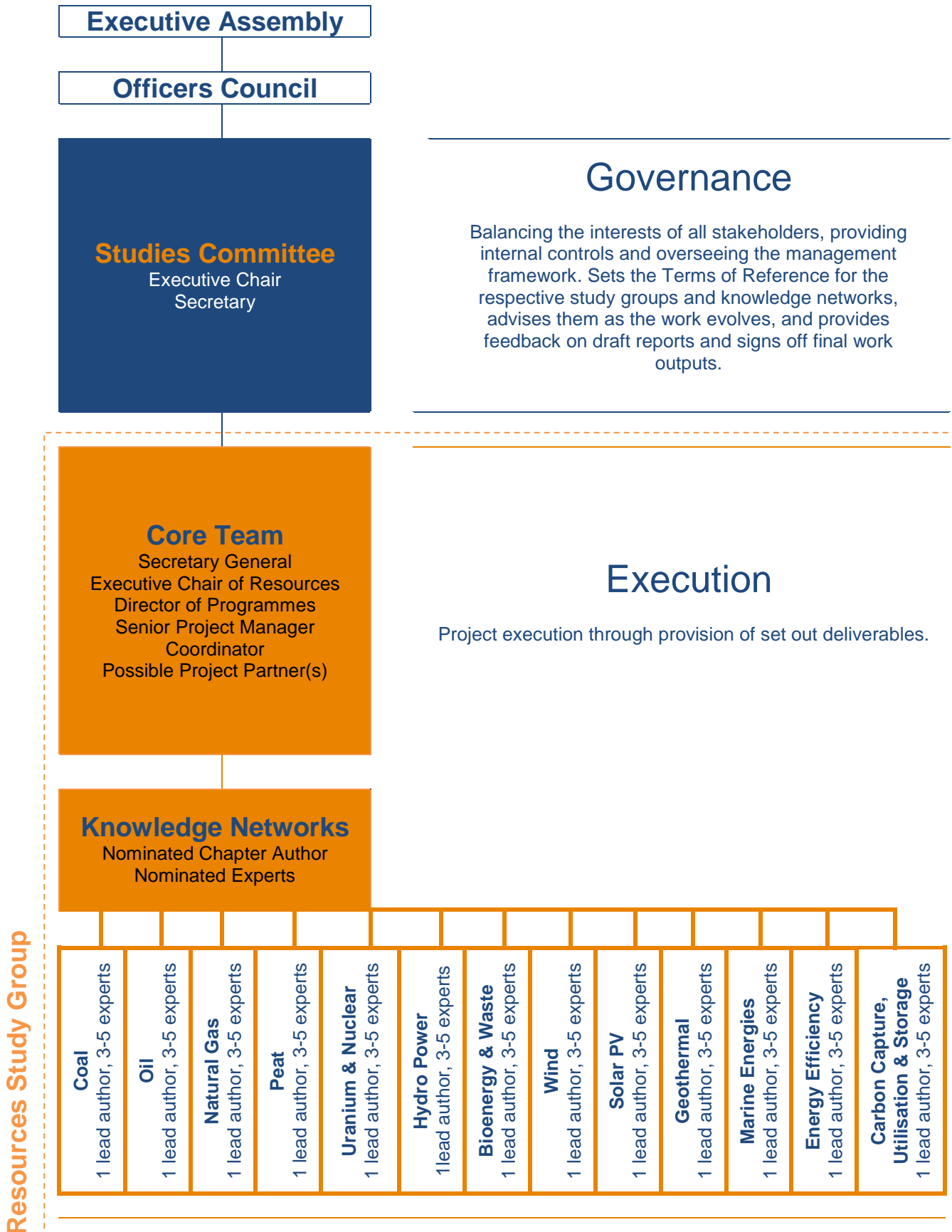
The content of WER Survey will be delivered by the individual Knowledge Networks. The Resources Executives will consist of WEC Executive Chair of Resources and three members of staff in London. The three members will delegate the work load and adhere to the following timeframe:

- 1.5 for data collection and validation
- 0.5 for data analysis, database administration and report data sections production
- 0.5 secretarial support drafting/proofing
- 0.5 higher level PPP

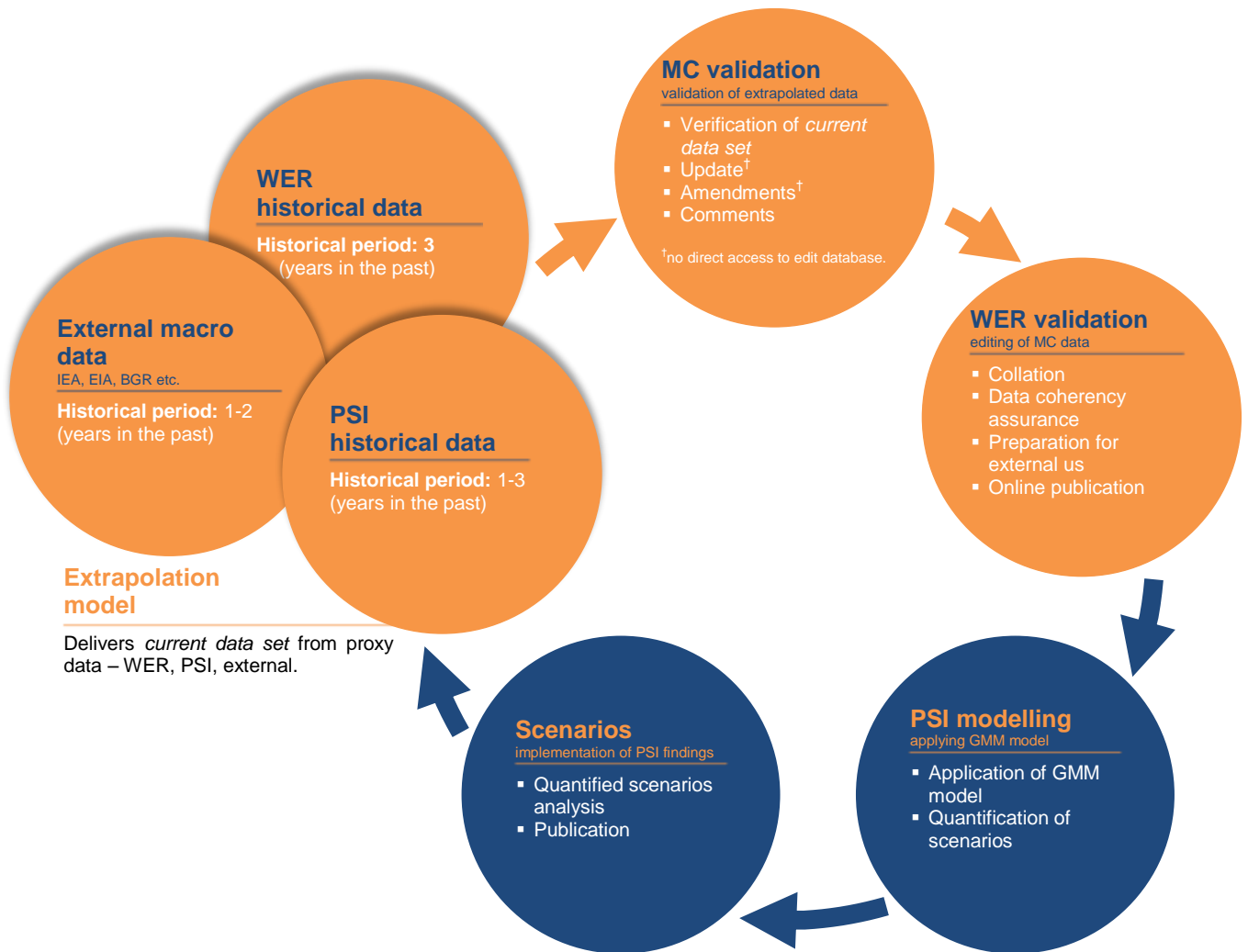
## **H. Project Partners**

Partnerships will be explored where considered appropriate. Current candidates include Accenture, Cisco Systems, Google, KPMG, Ernst & Young, Deloitte, and Mott MacDonald.

## Annex A: Organisational structure of WER



## Annex B: Resource data acquisition, quality assurance and implementation loop



## Annex C: Timeline of WER activities (subject to change)

	Event	Synergy	WER Perspectives
<b>Date</b>	<b>2014</b>		
<b>Feb.</b>	Africa Energy Indaba Johannesburg, South Africa		
<b>May</b>	WELS Astana, Kazakhstan		
<b>Jun.</b>	21st World Petroleum Congress Moscow, Russia		Oil (unconv.)
<b>Jun.</b>	FOREN Neptun, Romania		
<b>Oct.</b>	Power-Gen Middle East 2014 Abu Dhabi, UAE	Focusing on power Generation, T&D and Water	Nuclear
<b>Oct.</b>	WELS/EA Cartagena, Colombia	Scenarios (hydropower, bio fuel)	Hydro, Bio
<b>Oct.</b>	India Energy Congress India	Could clash with Issues Monitor	Coal
	<b>2015</b>		
<b>Feb.</b>	Africa Energy Indaba Johannesburg, South Africa		Renewables
<b>Oct.</b>	Power-Gen Middle East 2015 Abu Dhabi, UAE	Focusing on power Generation, T&D and Water	Nuclear
<b>Dec.</b>	UNFCCC COP21 Paris, France		CC(U)S
<b>TBC</b>	North American Forum Location TBC		Gas (unconv.)
<b>TBC</b>	CONGI Bolivia		
<b>TBC</b>	EA Ethiopia	Could clash with WEC Trilemma	
<b>TBC</b>	India Energy Congress India		Coal
<b>TBC</b>	WELS Location TBC (possibly St Petersburg, Russia)		
<b>TBC</b>	WELS Location TBC	Possibly co-hosted with Asian Development Bank	
	<b>2016</b>		
<b>TBC</b>	23rd World Energy Congress Istanbul, Turkey	Coordinate with scenarios regarding resilience, energy- water-food nexus.	23 <sup>rd</sup> triennial publication – “World Energy Resources: 2016 Survey”