# IAPWS-2016, 11-16 September 2016, Dresden

- 90 participants from 18 countries
- Working Groups (WGs)
  - TPWS – Thermophysical Properites of Water and Steam
  - IRS – Industrial Requirements and Solutions
  - SCSW – Sub-Committee on SeaWater
  - **PCAS – Physical Chemistry of Aqueous Solutions**
  - **PCC – Power Cycle Chemistry**
- Purpose
  - Connecting academia and industry to provide problems and research needs to researchers and to update engineers on research results
- Outcome
  - Releases/guidelines on physical and chemical properties
  - TGDs  for the power industry

# PCC & the work on TGDs

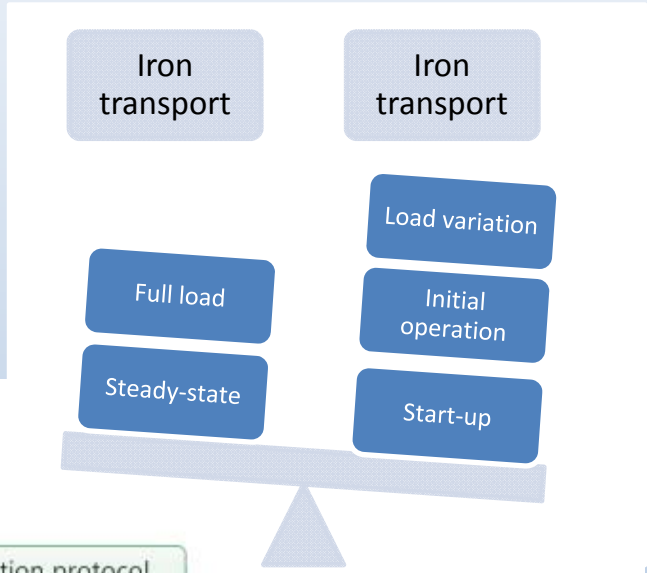
- TGDs released in 2016 (see http://www.iapws.org/techguide.html)
  - HRSG High Pressure Evaporator Sampling for Internal Deposit Identification and Determining the Need to Chemical Clean
  - Application of Film Forming Amines in Fossil, Combined Cycle, and Biomass Power Plants
- Planned TGDs (at least white papers in Kyoto 2017)
  - Demineralisation Plant Integrity (new, instrumentation, maintenance, supervision)
  - Air In-Leakage (new, detection, consequences, SIAPWS involved)
  - Corrosion Product Sampling and Analysis for Fossil and Combined Cycle Plants (revision, flexible plants, methods, uncertainty , SIAPWS involved)

# TGD on Corrosion Product Sampling and Analysis

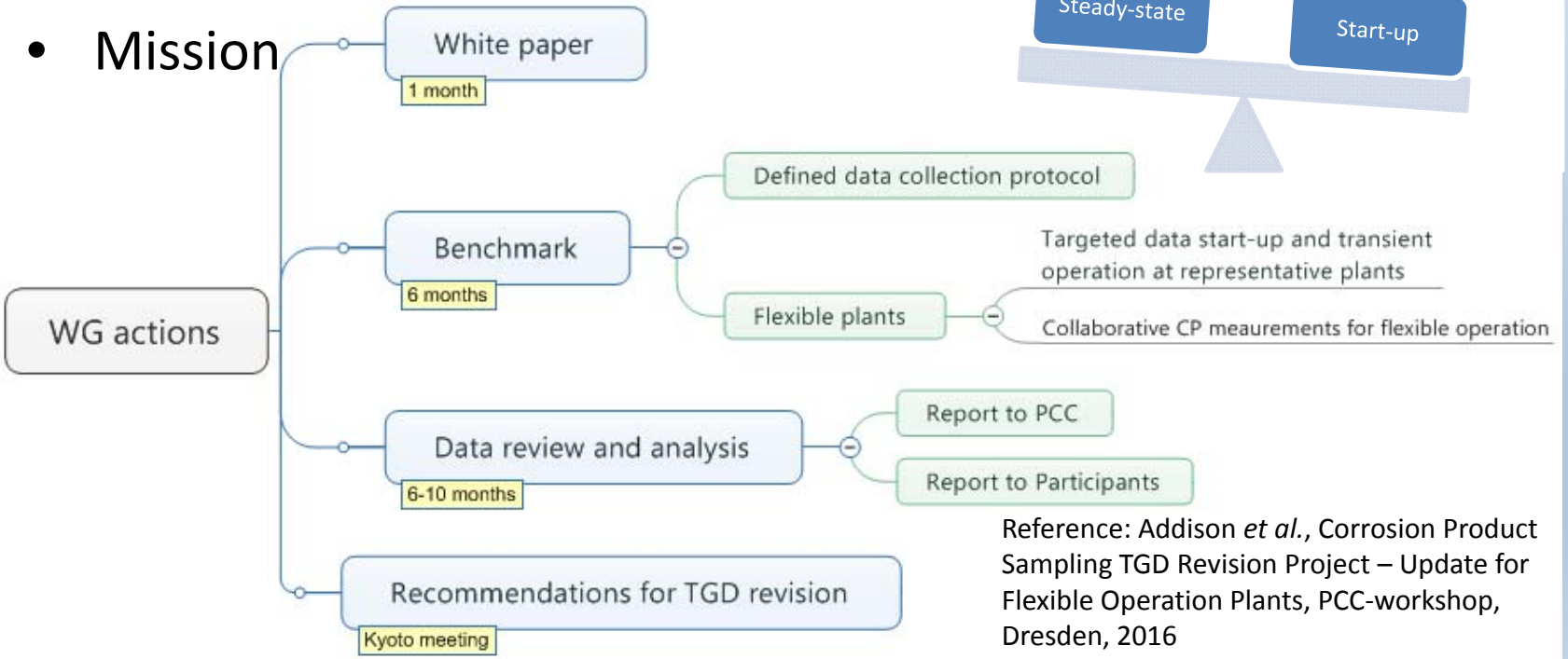
Task group: Addison, Cook, McCann, Thomsen

- Vision for flexible plants

  to sample representatively,
  to analyse and interpret corrosion products,
  to take the correct cycle chemistry related actions,
  to minimise corrosion, corrosion product transport & deposition,
  and to minimize the risk of plant failures




- Mission




Reference: Addison *et al.*, Corrosion Product Sampling TGD Revision Project – Update for Flexible Operation Plants, PCC-workshop, Dresden, 2016

# Evaluation of the comparison results between 9 sampling situations (8 plants)

Observations for the well-resolved datasets:

- Two separate parts in the log-normal distributions, discernible in both plots.
- Highest values represent the true distribution of Fe coming out of the sampling system – reflects the particle size distribution
- The lowest values show the limitation of the analysis method in resolving the true content

Note

- Highest values are usually discarded as outliers – i.e. meaningful information is thrown away, values used for evaluation are from data smeared out by the analysis method ☹