5th Technical Workshop on Nuclear Fuel Cycle Simulation

Topical Session: Nuclear scenarios exploratory analysis

Chair: Francisco Álvarez-Velarde (CIEMAT, Spain)
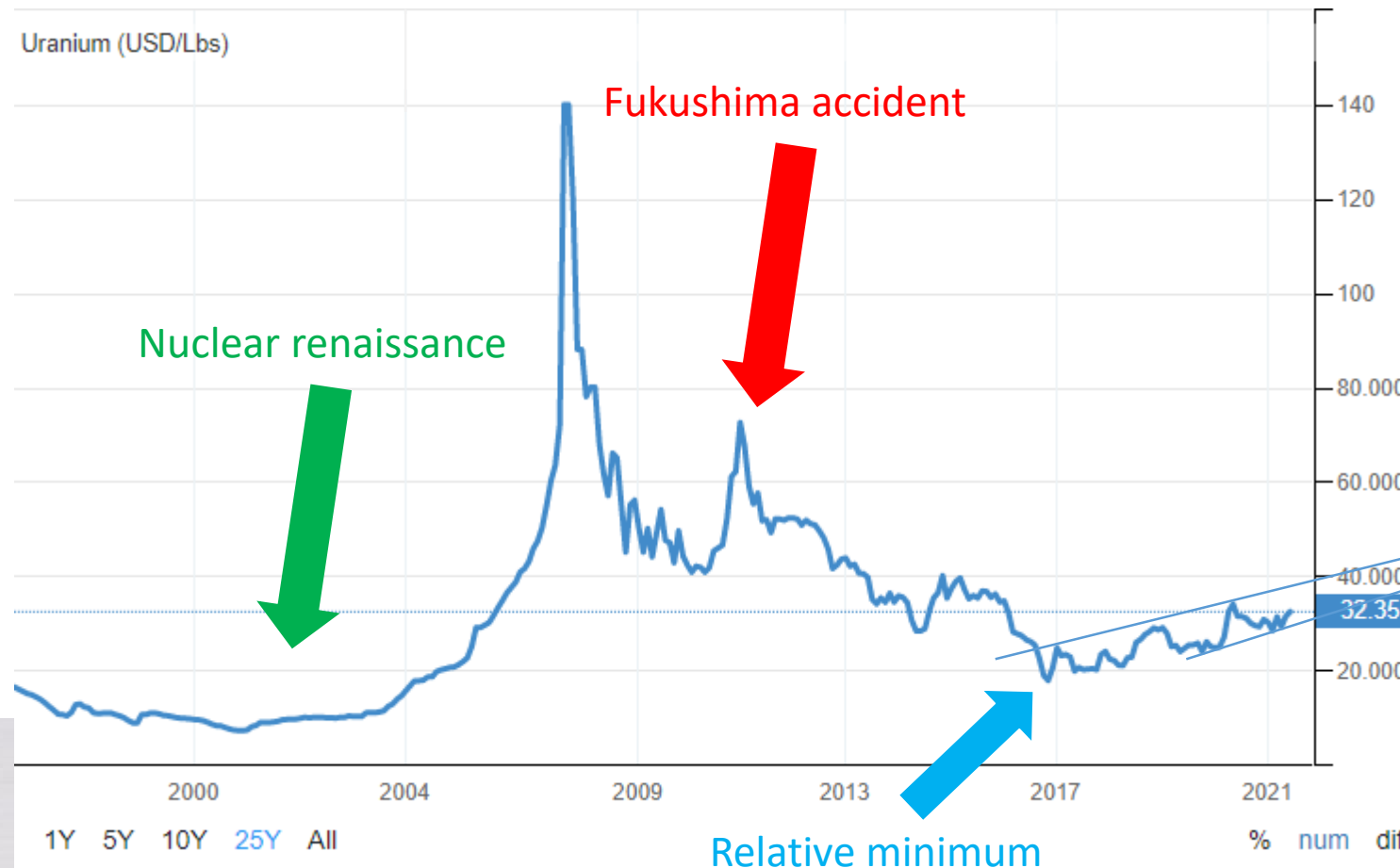
July 1st 2021

TWoFCS WORKSHOP 2021

Technical Workshop on Fuel Cycle Simulation 2021

What is an exploratory analysis?

- A fuel cycle analysis consists in understanding the full range of nuclear related facilities, given a set of boundary conditions.
  - ➢ Reactor fleets
  - ➢ Fabrication
  - ➢ Enrichment
  - ➢ Storage
  - ➢ Reprocessing…
- A huge number of possibilities ahead… need to know more!

Example of an exploratory analysis

Market price of uranium (USD/lbs) for the last 25 years

Exploratory analysis

- Disruptions

- Uncertainties

- Optimization

- Sensitivity

- Comparison of scenarios

- …

Nuclear scenarios exploratory analysis #1

- Impact of disruption between options of plutonium multi-recycling: in PWRs and in SFRs

  Jiali LIANG (CNRS, France)

- Fuel cycle observables comparison from a UOX+MOX scenarios based on irradiation libraries computed with different energy deposition models

  Augusto HERNÁNDEZ SOLÍS (SCK, Belgium)

- Uncertainty and optimization: a coupled problem for scenario analyses

  Aris V. SKARBELI (CIEMAT, Spain)

More presentations by Friday afternoon!!