**Presentation title:** Production and underground storage of hydrogen and dimethyl ether as future energy: review

**Corresponding Author name:** Mojtaba Abedi

**Affiliation:** Hydrogen production unit, Esfahan Petroleum Refinery Company

**Ph. No:** +98 9390701970

**Email ID’s:** m\_abedi99@sut.ac.ir

**WhatsApp No:** +98 9390701970

**Any alternative number:**

**Other Authors if any:**

**Presentation type:** Poster presentation

**Abstract (250-300 words):**

It is no secret that fossil fuels contributed a lot to the development of the world. However, the recent scientific outlooks are currently shifting as more research is targeted towards promoting a carbon-free economy in addition to the use of electric power from renewable sources. Hydrogen (H2) and Dimethyl ether (DME) have considerable potential as reliable source of energy for fuel or electricity production. But it is necessary to pay attention to their production method, if we go from the absorbed carbon dioxide to the production of dimethyl ether and convert the gray hydrogen into blue hydrogen by CDR methods or go towards the production of green hydrogen, then it can be said both of them are green energy and contribute to the energy transition period and reach sustainable zero carbon. To commercialize these two fuels, we need huge storage capacities. Underground storage can be the best option ahead but it should be noted that underground storage has its own challenges for each of them because when the injected fluid comes in contact with the underground formation fluid, it is no longer easy to produce it. In this work, the green production style and underground storage of these two gases and their related challenges have been compared.

**Biography (150-200 words):**

XXXX He studied petroleum-chemical engineering and specializes in energy storage. He is a member of the editorial board of Black Gold magazine of Petroleum University of Technology and works at the EORC company.