Memo

INVITACION

TOTAL y la **escuela IFP** tienen el honor de invitar a su Comunidad Universitaria al curso:

"Innovation Towards a Low-Carbon Future"

Este curso está diseñado para ayudar a los participantes a comprender los desafíos de la transición energética, utilizando el escenario de calentamiento global del Acuerdo de París como su referencia principal. Discute la demanda y el suministro de energía, las energías renovables para la generación de electricidad en un mundo con restricción de carbono y los recursos subterráneos (geotermia y gas natural). También analiza las innovaciones disponibles para enfrentar este desafío, incluida la captura y el almacenamiento de carbono, el almacenamiento de energía, la eficiencia energética, los biocombustibles y los productos químicos de origen biológico (consulte el programa detallado adjunto

Les hacemos llegar una presentación de lo que es MOOC, para la difusión entre su comunidad universitaria.

El curso es totalmente gratuito, en línea, en Inglés con subtítulos en español, con una duración de cinco semanas **inicio registro el 27 de Enero 2020** *(se requiere invertir 2 a 3 horas por semana)*

Para registrarse hay que ingresar al link:
https://mooc.innovation.ifp-school.com/Minisite/home/22186 y ver el video de presentación

Al final del curso, se otorgará un certificado con validez oficial.

Agradecemos de antemano la presente y esperamos sea de gran intereses este curso entre su comunidad universitaria.

Atentamente

ESPERANZA GONZALEZ LOPEZ
Director de Recursos Humanos

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MOOC Energy Transition: Innovation Towards a Low-Carbon Future

The objective of this free online course, over four weeks and within the context of the energy transition and sustainable development, is to understand the technical concepts and innovation challenges of a decarbonized energy mix to mitigate climate change impacts associated with global warming.

Learning Goals:

Upon completion of the course, participants will be able to:

- State on the world energy context and its expected evolution considering the energy transition challenges to meet sustainability in development;
- Demonstrate the advantages of a sustainable energy mix based on the development of renewable sources of energy and natural gas, in order to achieve carbon neutrality by the end of the century;
- Analyze associated limitations and justify innovative mitigation solutions based on the development of underground storage capacities for emitted CO_2 and energy from renewables. Describe how these options can be deployed in time;
- Demonstrate the importance of energy efficiency in processes, the advantage of new generation of biofuels regarding induced CO_2 abatements and describe selected technical solutions.

Note that for this second edition, the videos will be subtitled in Spanish and pedagogical materials will be available in both French and Spanish such as the evaluation mini-games. Thanks to Total foundation for its support in association with Fondation Tuck.

Content:

Week 0: MOOC Introduction: Energy Transition Challenges

- World energy demand challenge
- Stresses on the energy demand: resources, environment, global warming
- A low carbon future: the 2°C scenario energy mix

Week 1: Energy mix part 1: Renewables for electricity generation in a carbon constrained world

- Renewables and power generation in the global energy mix
- Renewable electricity: technical and economic trends
- Focus on offshore wind innovation challenges
- Renewables: Challenges for sustainability and solutions

Week 2: Energy mix part 2: Underground resources: geothermal power and natural gas

- Geothermal power
- Gas rise: a mature chain from production to distribution and storage
- Greenhouse gas emissions reduction from production to end-use and gas decarbonization

Week 3: Underground CO_2 storage and energy storage

- Carbon capture and storage
- Underground energy storage scenarios: H_2 (power to gas), heating-cooling, advanced compressed air
- Focus on Advanced Compressed Air Energy Storage

Week 4: Energy efficiency in processes, biofuels, bio sourced chemicals and benefit regarding CO_2 emissions reduction

- Heat network integration/optimization, stop/reduce steam trap leakages and recover waste heat from flue gas
- Biomass to biofuels
- Bio based chemicals

Who should attend?

This MOOC is intended either for students and professionals interested in the energy transition challenges and innovative solutions to reduce CO_2 emissions. But more specifically it is intended for those willing to gain knowledge about developing a decarbonized energy mix based on both renewables and natural gas, underground CO_2 and energy storage, energy efficiency and CO_2 abatements in processes, biofuels. In general, for those who are convinced that climate change is really a challenge that can also be sustained through concrete solutions and societal awareness.

When?

The MOOC will start on **January 27th 2020**. The effective course duration is 5 weeks including the introduction week. Registration will be open until February 21st 2020.

Interested?

All contents are online and free.

The effort estimated to complete the course is 2-3 hours per week.

You can sign up here: https://mooc.innovation.ifp-school.com/Minisite/home/22186

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