AI-Powered Skilling
for the Great Energy Transition

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Fossil-Fuel Jobs in the Global Workforce Must Prepare for a Pivot to Renewables

In light of COP 28's emphasis on accelerated climate action and energy transition, **the challenge for managers and executives in the...petroleum sectors is to innovatively and responsibly navigate...meeting global energy demands while actively transitioning towards more sustainable energy sources.**

The Challenge:

Leverage AI to Uncover and Accelerate Steps Needed for Oil & Gas Professionals to Pivot to Jobs in Renewables

1. Identify data sources
2. Develop prompts and agent instructions
3. Create agents that provide for accurate, **actionable** outputs

Occupational Information Network (O*NET)
Standardized Data Provides a Foundation for Skill Pathways

The O*NET database contains hundreds of standardized and **occupation-specific descriptors** on almost 1,000 occupations covering the entire U.S. economy.

The database, which is available to the public at no cost, is continually updated from input by a broad range of workers in each occupation.

https://www.onetonline.org/

AI-Powered Skilling: Focus Roles

Electrical Engineer

O*NET 17-2071.00

Chemical Engineer

O*NET 17-2041.00

Geoscientist

O*NET 19-2042.00

Primary Categories for Skill Pathways: **Knowledge, Skills, Abilities**

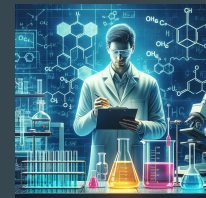| **Fossil Fuels Sector** KSAs	**Renewable Energy Sector** KSAs	Detailed Transition Requirements
Chemistry Chemical composition and processes of fossil fuels.	Sustainable Design and Environmental Impact Understanding of sustainability practices and the environmental impact of renewable systems.	Workshops: "Sustainability Practices in Engineering", "Environmental Impact Assessment". Certifications: Certified Sustainability Professional (CSP).

Example: Chemical Engineer   O*NET 19-2042.00

Primary Categories for Skill Pathways: **Activities, Tasks**

Fossil Fuels Sector Activities & Tasks	Renewable Energy Sector Activities & Tasks	Detailed Transition Requirements
Locating natural resources using geospatial data	Locating and evaluating sites for renewable energy projects (e.g., wind farms, solar panel installations)	Enhance skills in remote sensing and geospatial analysis through online courses and certifications, such as those offered by the American Society for Photogrammetry and Remote Sensing (ASPRS).

Example: Geoscientist   O*NET 19-2042.00

Primary Categories for Skill Pathways: **Tools, Technology Used**

Fossil Fuels Sector Tools, Technology	**Renewable Energy Sector** Tools, Technology	Detailed Transition Requirements
Ground Penetrating Radar (GPR)	LiDAR Technology	Reskilling: Workshops or certifications in LiDAR technology and its application in wind and solar energy for terrain analysis. Timeline: 4-8 months.

Example: Geoscientist

O*NET 19-2042.00

Bridging the Gap Between O*NET and AI Agents

Chemical Engineer's Renewables Skills Navigator

By Larry T Wilson

Guides through renewable energy careers and skills.

By developing occupation-specific agents, professionals can consult the agents for specific information on how their role will change in the context of renewable energy.

Three Products:

Electrical Engineer

Chemical Engineer

Geoscientist