



# Understanding and Preparing for the Labor Impacts of Decarbonizing the U.S. Economy

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## Concern 1:

## Obsolete workers



Coal miners marching in the Lusatia coal region of Germany

## The Boston Globe

### Avoiding job loss in the transition to renewable energy

Policy makers must act now to blunt job losses by being prepared to offer much more help to workers who are affected by mass layoffs.

By Gordon Hanson Updated February 1, 2023, 11:27 AM

BBC

### Taiwan election: It's not war young voters worry about - it's jobs

11 January 2024

By Tessa Wong  
BBC News, Taipei

# Concern 2: Unprepared workers

## THE WALL STREET JOURNAL

### America's Green Skills Gap Raises Concerns About Energy Transition

By Dieter Holger

July 6, 2023 3:00 am ET

In 2022, U.S. green job postings on LinkedIn jumped 20%, but green talent grew only 8.4%



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION  

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Progress by innovation

“green skills are the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society”



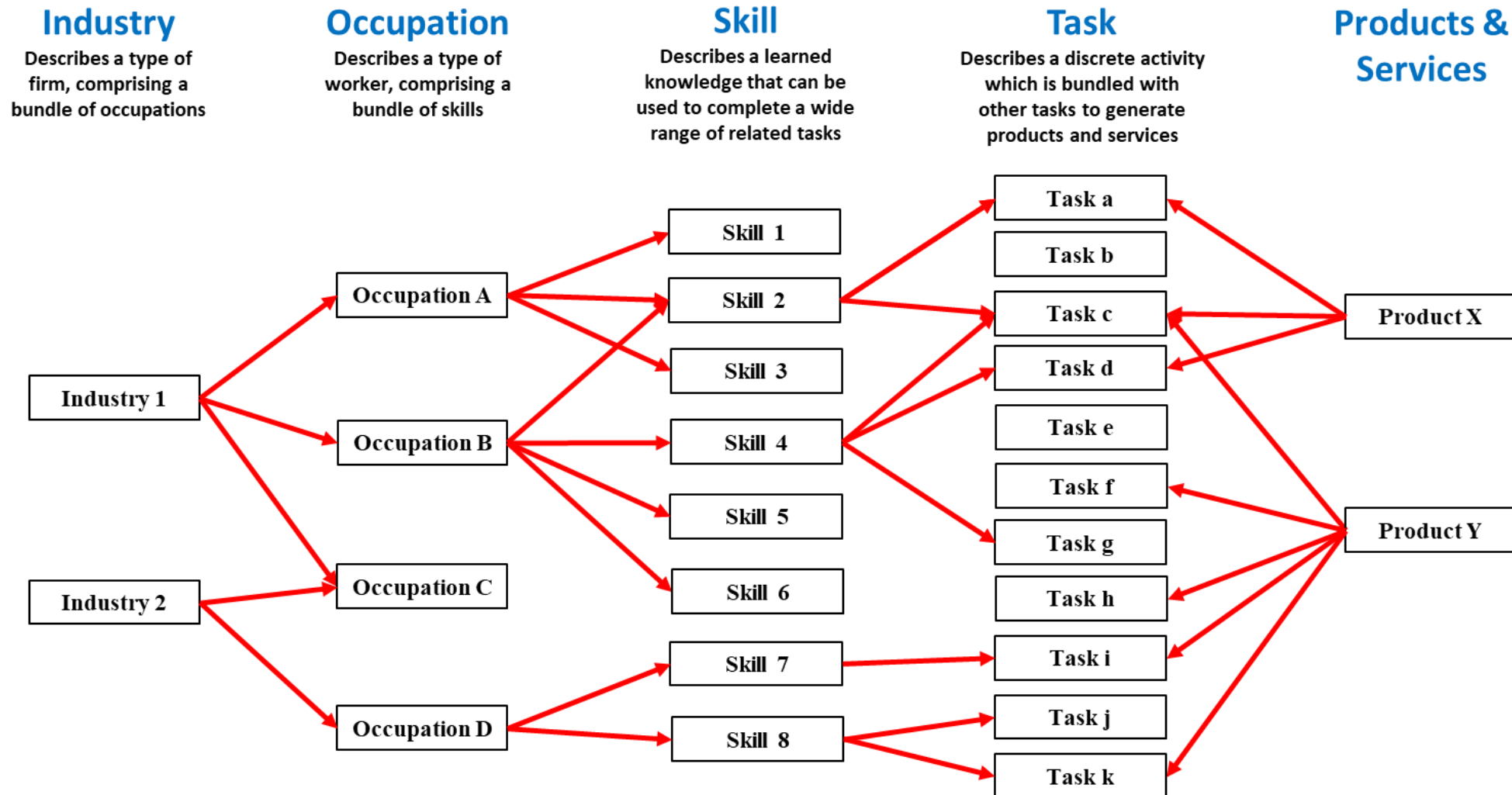


## Two guiding research questions

**How will workers be impacted  
by decarbonization?**

**What can policy makers do to  
mitigate those impacts?**

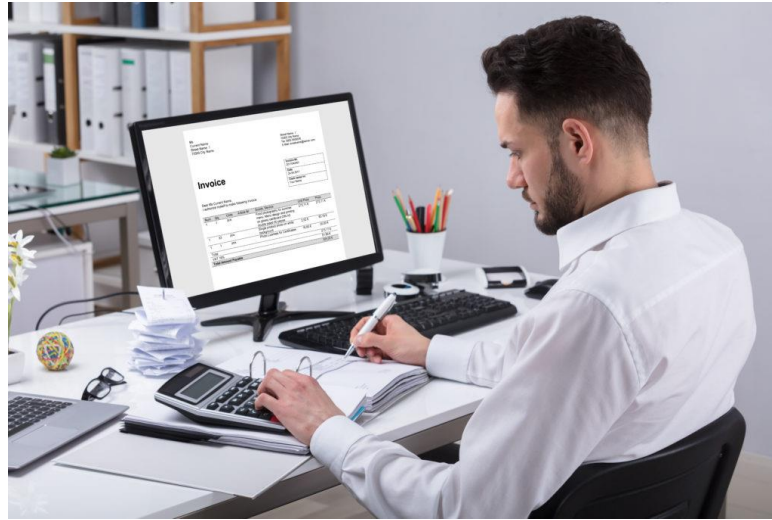
# A framework for studying the US workforce



Four example jobs:

How will they differ  
in a decarbonized  
economy?

Accountant



Coal Miner



Auto Mechanic



Solar Panel Installer

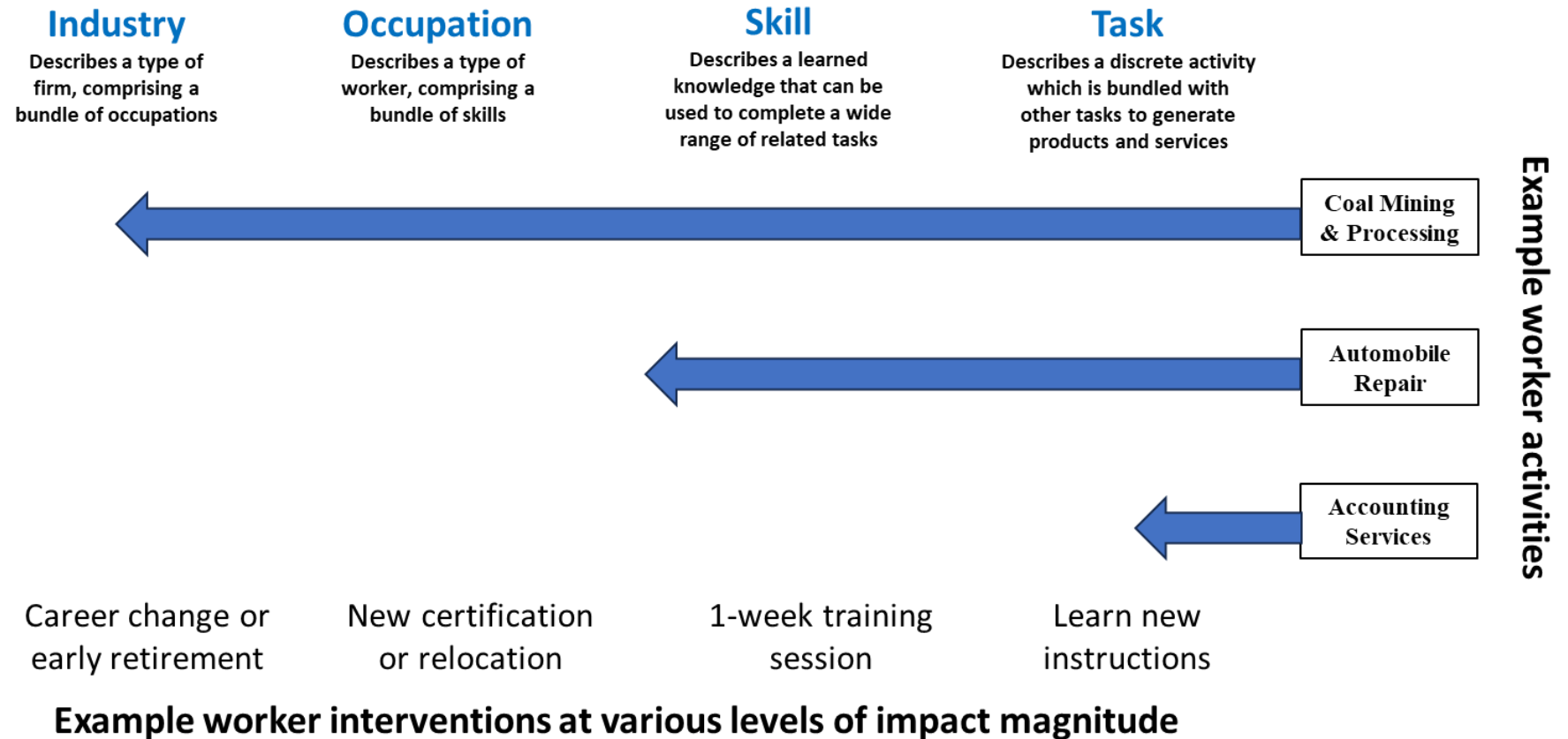




# Jobs will not simply be obsolete or new

A range of impacts will be felt requiring a range of policy interventions

It is possible (likely?) that most impacts will be minimal



# What is the impact on workers



- How will employment impacts of decarbonization differ by industry sector?
- How will employment impacts of decarbonization differ by occupation?
- How will decarbonization impact various products and services?
- How will employment impacts of decarbonization differ by geography?

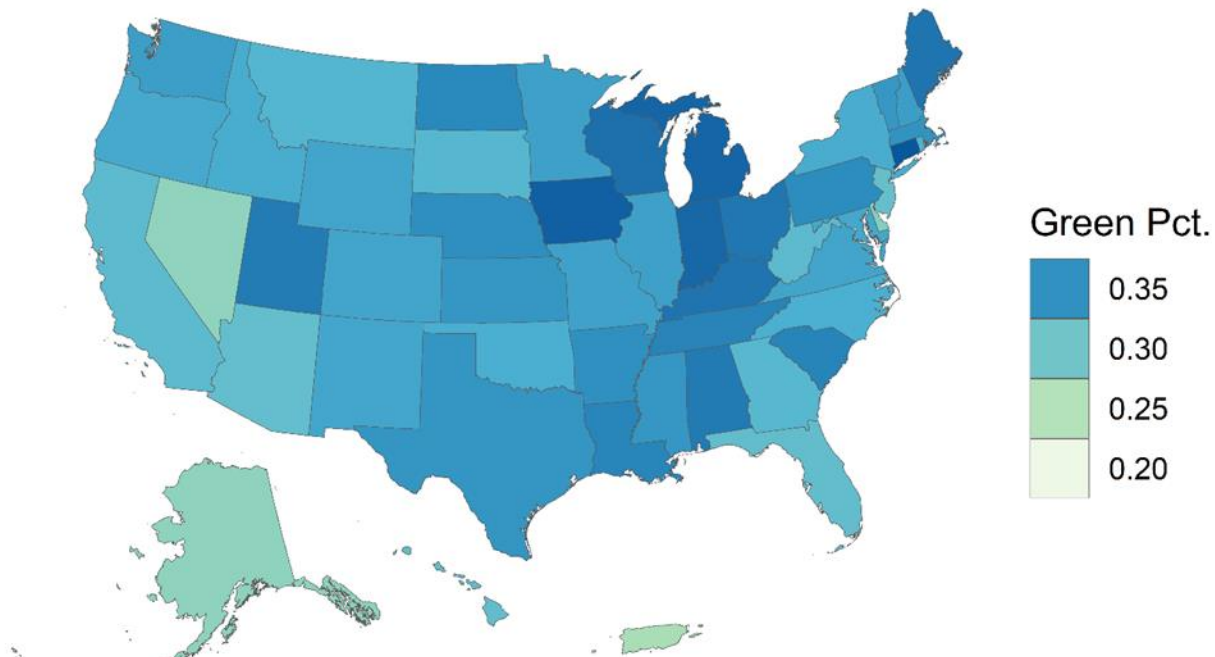


# How can worker disruption be mitigated?

- **What are low-resistance pathways for workers to move between legacy occupations and industries to new occupations and industries?**
- **How much will decarbonization require worker relocation as opposed to skills upgrade?**
- **How does worker age and experience affect the likely success of different disruption mitigation strategies?**
- **How can the resilience of the future workforce be increased?**



# Related questions



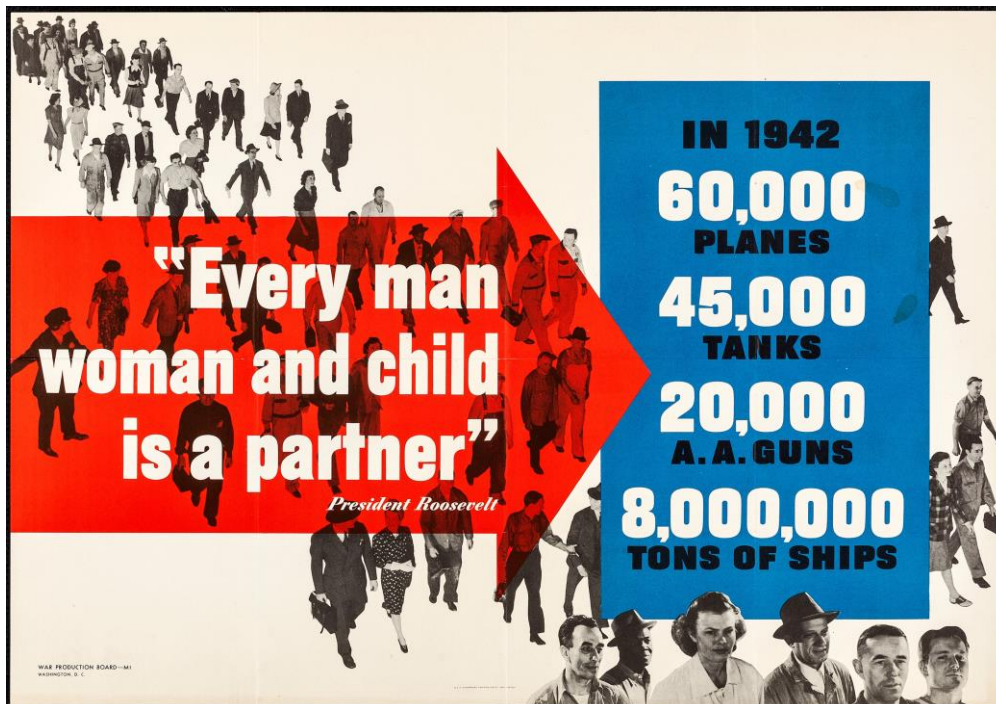
Fraction of U.S. workers engaged in industries that could presently undertake sustainable activities

- How do worker skills for a given occupation systematically vary across industry and city size?
- What GHG emissions are linked to individual product and how do those product link to worker tasks?

# Learning from history

January 1942, the WPB established to:

- (1) Transition the nation's industry
- (2) Conserve critical materials



- The Lionel toy train company started producing items for warships, including compasses.
- Ford Motor Company produced B-24 Liberator bombers.
- Alcoa, the aluminum company, produced airplanes.
- The Mattatuck Manufacturing Company, which had made upholstery nails, switched to making cartridge clips for Springfield rifles.



# Summary

- Fears over **labor disruption** are a major obstacle to decarbonization
- **Social science** can help assess the nature of that disruption and suggest solutions
- Analyzing **worker tasks** offers a fruitful and novel approach
- **Data obstacles** exist

