

Meeting well-below 2°C target would increase energy sector jobs

ZOI VRONTISI - E3MODELLING

RFF-CMCC NAVIGATE Webinar, June 2020

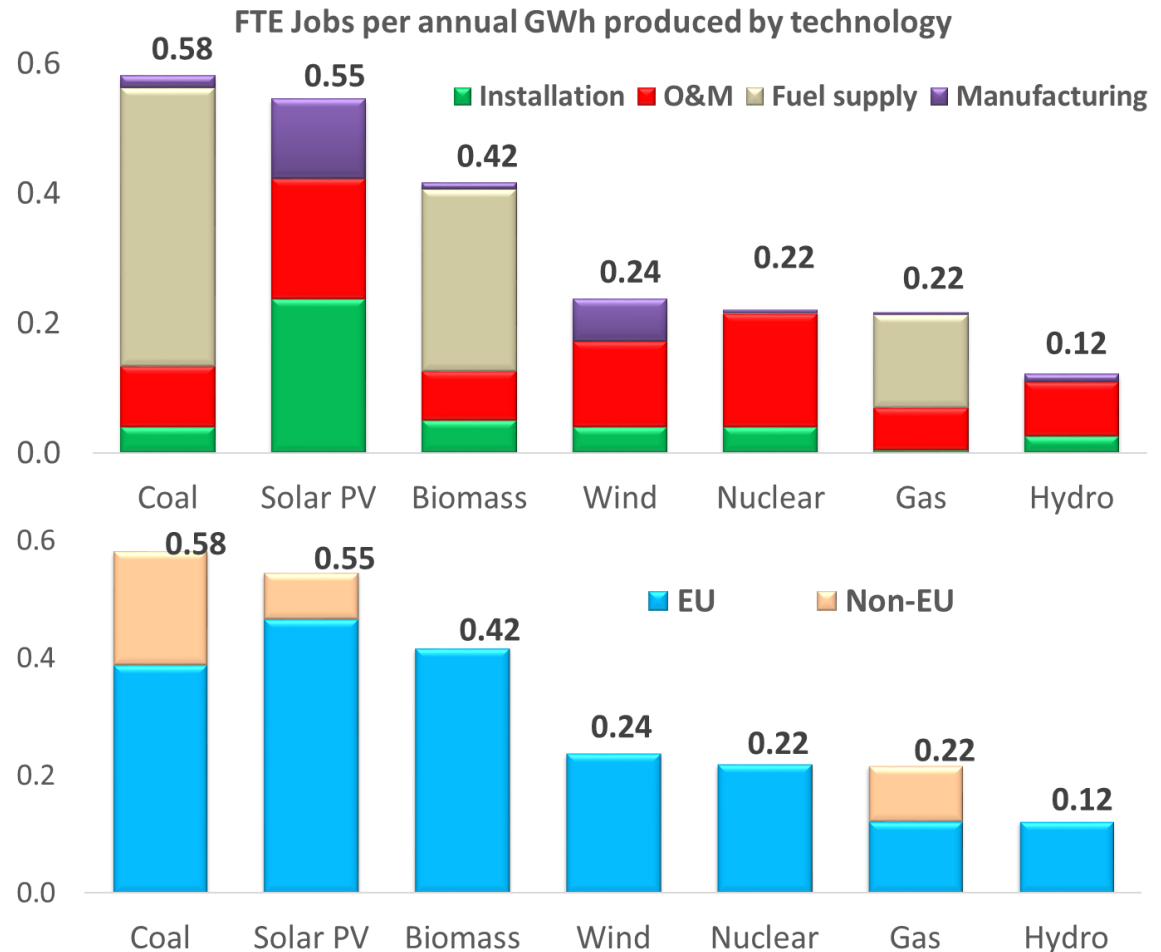
Labour Intensity of power technologies

RES jobs:

- On average RES are more labour intensive and have a higher domestic job content than fossils
- PV is labour intensive due to small unit size, low load factor and installation work
- RES jobs mainly in construction and manufacturing stages

Fossil fuel jobs:

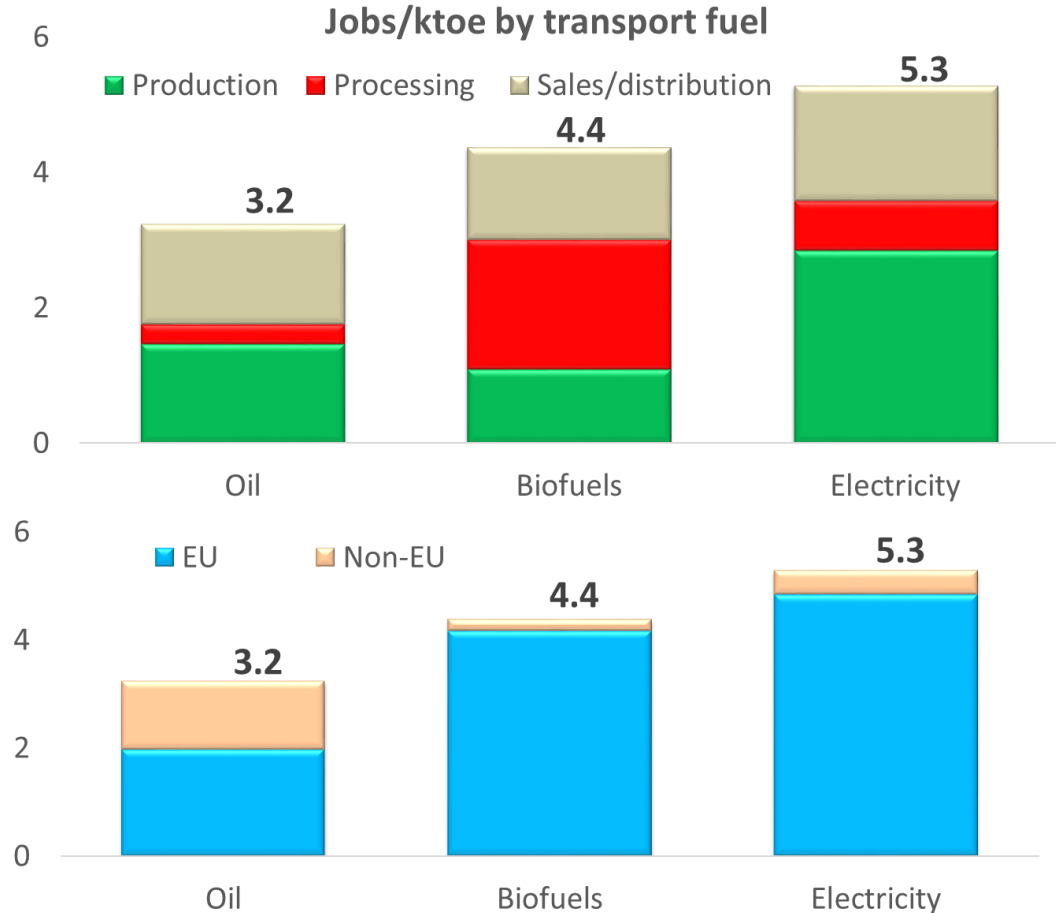
- Jobs in gas and coal fuel supply are largely generated in non-EU countries
- Coal: most labour intensive technology
- Gas: Lower labour intensity than coal due to high automatization and mechanization



Fragkos and Paroussos, 2018

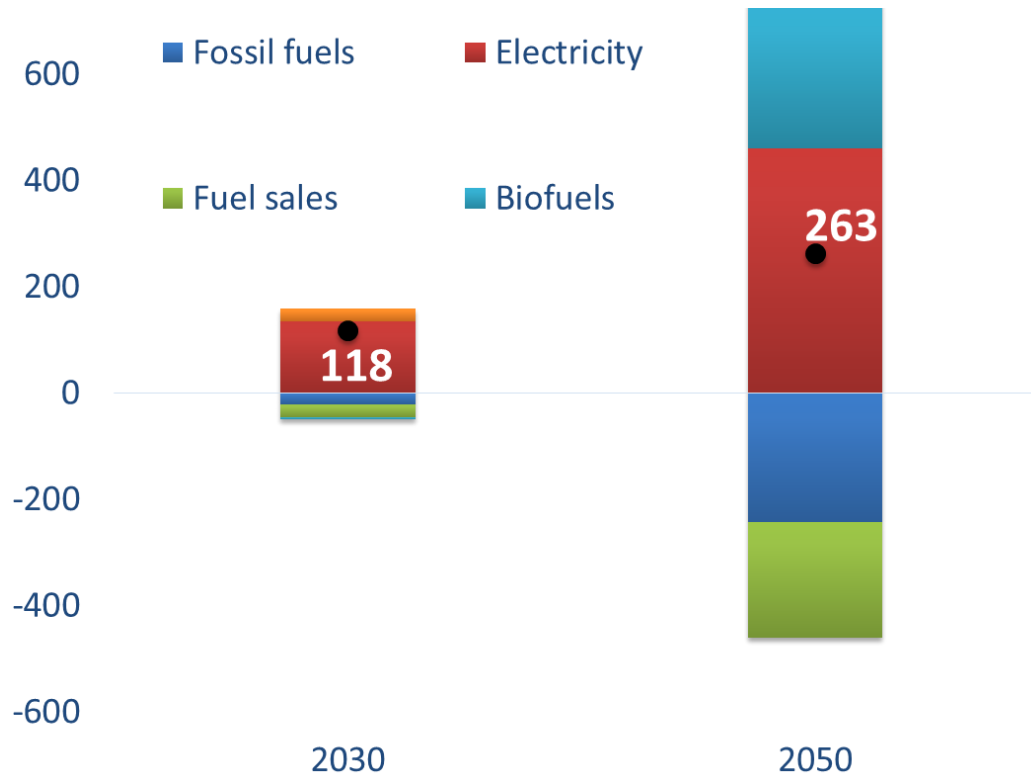
Labour Intensity of transport fuels

- Lower labour intensity of oil due to high mechanization of related processes
- When measured in jobs per activity, biofuels create more jobs than oil and electricity



Fragkos and Paroussos, 2018

Direct energy jobs



EUCO vs Reference:
Difference in EU jobs (in 000s)

Fragkos and Paroussos, 2018

Economy-wide effects with GEM-E3 model

Direct energy sector effects:

Domestically produced clean energy technologies vs. conventional energy sectors

Industrial competitiveness effects:

Energy cost changes, economies of scale, technical progress, regional value chains

Households, skills and labor market:

Labour intensity of growing sectors, new skill demand, different levels of income and consumption patterns, energy expenditure limit other demand

Financial implications:

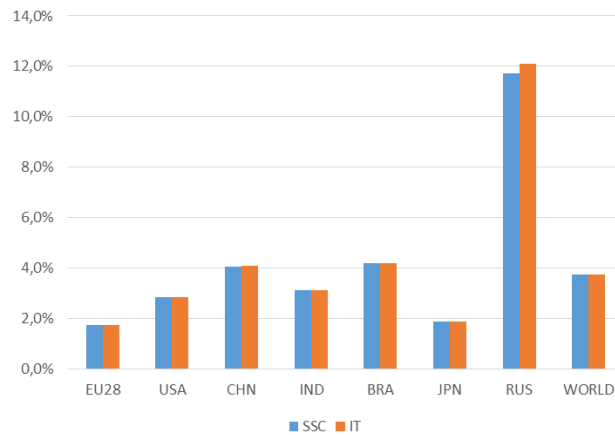
Investment growth, financing requirements, debt and interest payments limit disposable income

Sectoral decomposition of global employment impacts with GEM-E3 model

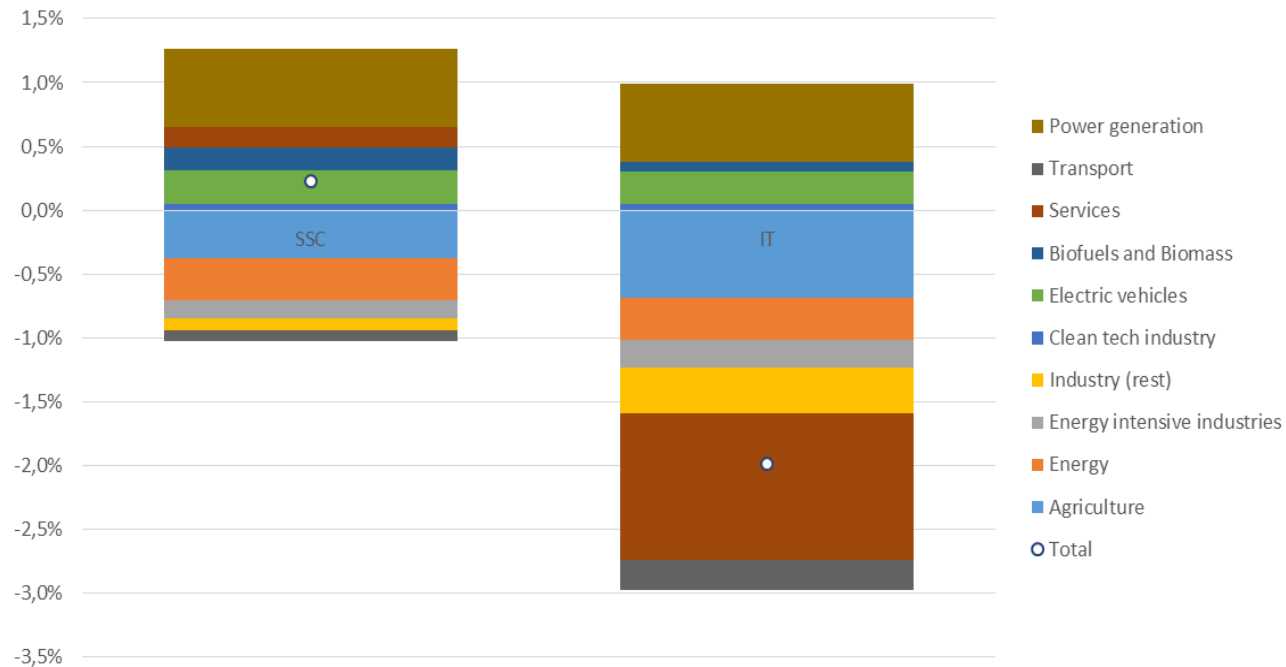
Carbon revenue recycling trough lowering

- Indirect taxes or
- Social security contribution

Carbon revenues as % of GDP in 2050



Global employment changes in 2050 - % changes from the Reference

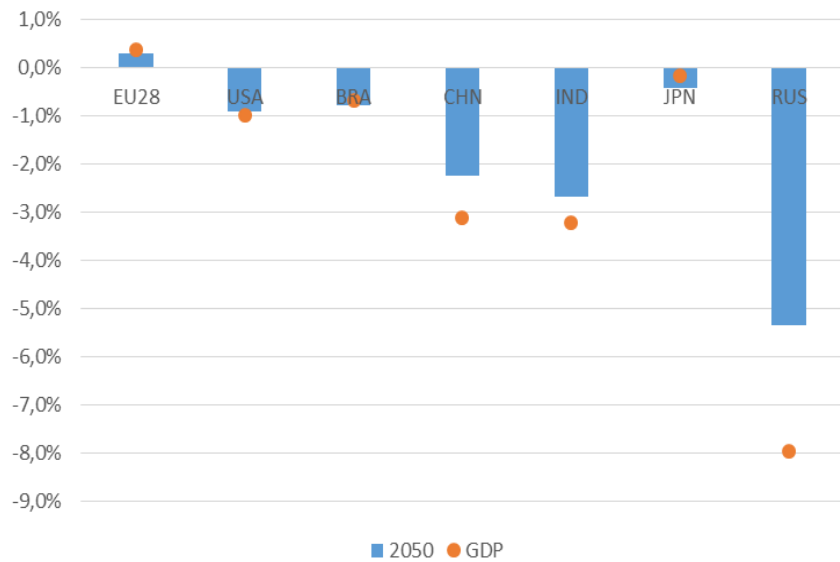


Regional Employment impacts with GEM-E3 model

Employment impacts (SSC) in 2050 - % change from the Reference



Employment impacts (IT) in 2050 - % change from the Reference



Thank you for your attention