Energy Economics Update/
Perspective 2020

Gail Tverberg, October 12, 2020, SSP IEEE WiSEE
Issue #1) Oil prices have been too low for producers since 2012. At today’s prices, 2012 level was $120 per barrel.
#1) Even OPEC oil producers need high prices to collect enough tax revenue for food subsidies; jobs programs.

**Figure 11: OPEC Fiscal Break-even Prices**
Issue #2) Oil production may head into terminal decline if oil prices cannot be raised to the $100+ level
#2) Oil producers need higher prices to match their higher cost of production.

- OPEC needs much higher prices to fund its programs
  - Needs higher funds for higher taxes
  - Danger of governments being overthrown
  - Likely much less production if warring factions in country

- Both US and Canada have added oil from shale and from bitumen since 2005
  - Many bankruptcies
  - Banks no longer willing to lend to oil and gas companies
  - Cutting back on investment in new drilling

- Even the “Rest of World” producers need high prices, to offset depletion
#2) Drilling rigs are down dramatically in 2020, likely leading to lower oil production in 2021 and beyond.
Issue #3) Low oil price problem comes from consumers being unable to purchase economic output
#3) Many reasons why potential consumers cannot purchase the output of the economy:

- Workers often have very low wages
  - Can’t afford homes, vehicles, restaurant meals
  - Globalization contributes to low-wage problem
  - Paying high wages to high tech workers leaves less for those less skilled
- Loans aren’t as helpful to low-wage workers
  - Interest rates are likely to be high
- Robots sometimes replace workers completely
- COVID shutdowns make problem much worse
  - Many more unemployed
  - Rich can no longer purchase overseas vacations; need fewer fancy clothes
  - Like taking out sticks supporting dome
3) Low wage problem is similar to the late 1920s

- Fix is likely to take years; much pain
- We are likely past “peak oil”; oil production may fall for years
Issue #4) We seem to be reaching “peak coal” as well. Low price problem affects coal, too.
#4) World coal production has been on a bumpy plateau since 2012. China’s coal production flat since 2012.
Issue #5) Coal and oil are the world’s top energy sources. We have a major problem without them!
#5) Difficult to depend on natural gas instead. Its prices have been low in recent years. 2020 lower yet!
Issue #6) The economy needs a bail-out similar to the growth of oil production after World War II

- **Oil:** Very inexpensive to produce, initially
  - Value to customers was very much higher
    - Sales price could be high above the cost of production
    - Very high “energy return on energy investment”
    - Opposite of “needing a subsidy”

- **Oil profits benefited economy as a whole**
  - High taxes helped governments; high dividends helped pensions
  - Easy to add new jobs, roads, electricity transmission lines

- Without a new, exceedingly inexpensive-to-produce energy source, the economy will tend to shrink back and may even collapse
Conclusion: The world economy really needs a new, very inexpensive energy source now

- Current economic situation makes it difficult to reach this goal
  - Economy is doing poorly
  - Overall “energy return” of today’s fuel mix seems to be too low
  - Makes it difficult to fund temporary subsidies for alternatives

- Economic crisis may take years to resolve
  - Energy innovations may have a chance in the rebuilding stage

- Perhaps hope?
  - Recent headline: [UAE Bets Big on Space Tech to Diversify from Oil](#)
  - Funds for research may be available, even if not for full implementation