

APPENDIX X: PATHWAY DIAGRAMS

An Appendix to the Report “A Lifecycle Emissions Model (LEM): Lifecycle Emissions from Transportation Fuels, Motor Vehicles, Transportation Modes, Electricity Use, Heating and Cooking Fuels, and Materials”

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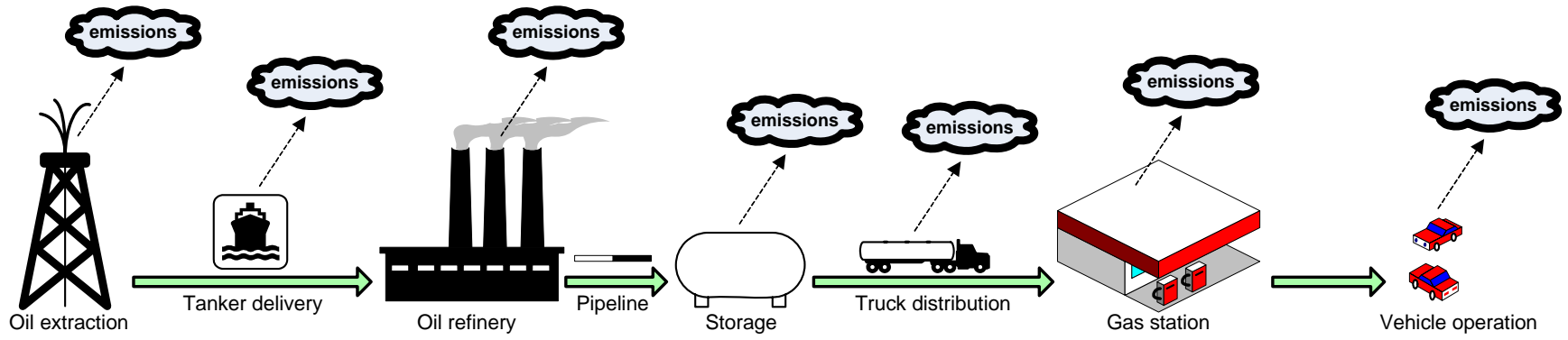
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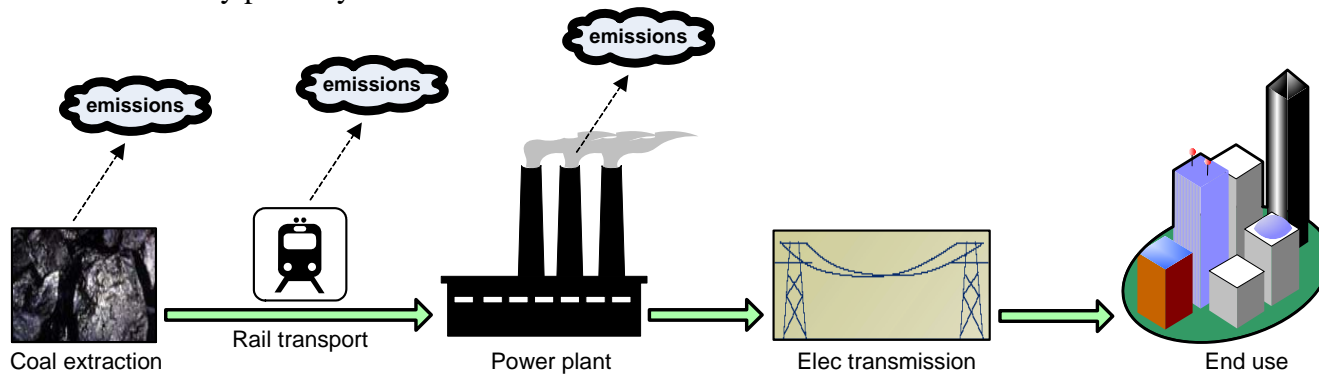
June 20, 2005

SINGLE PATHWAYS

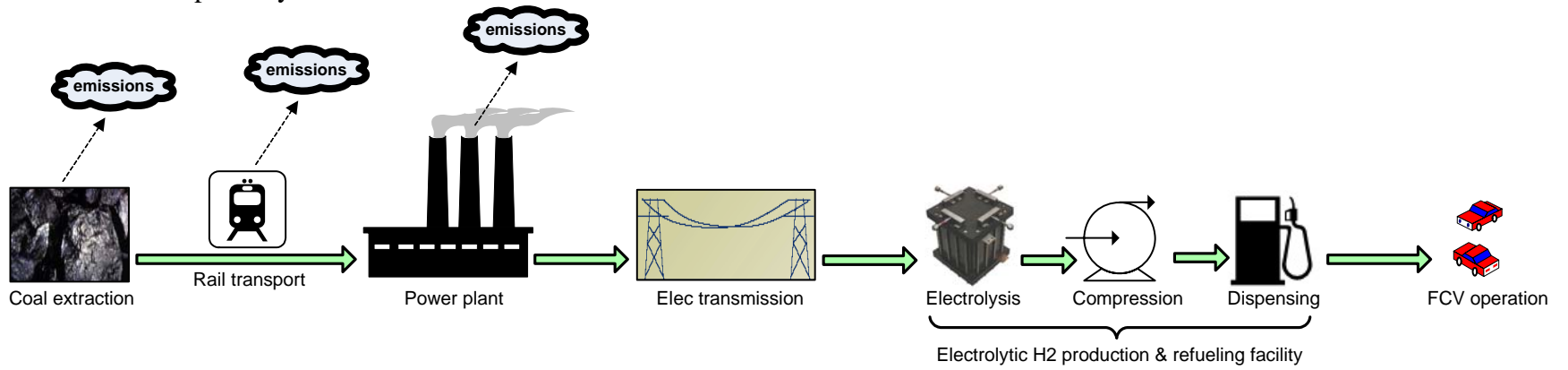
1. Petroleum pathway



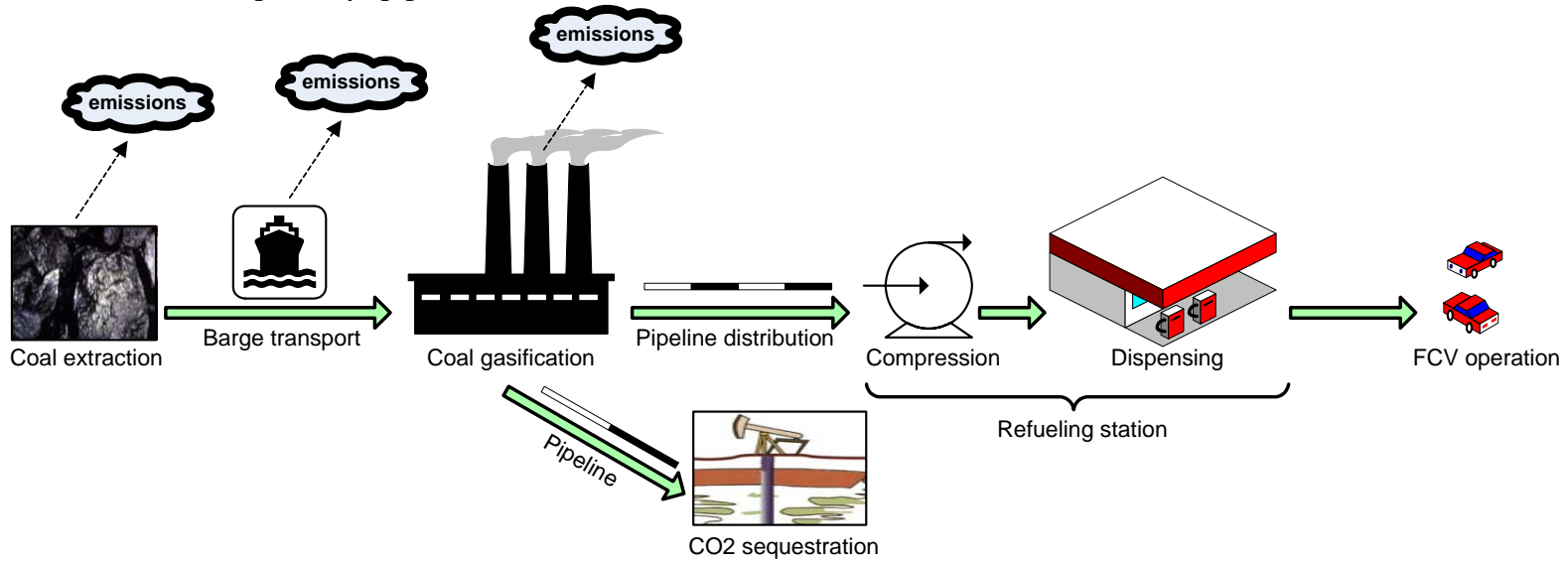
2. Electricity pathway



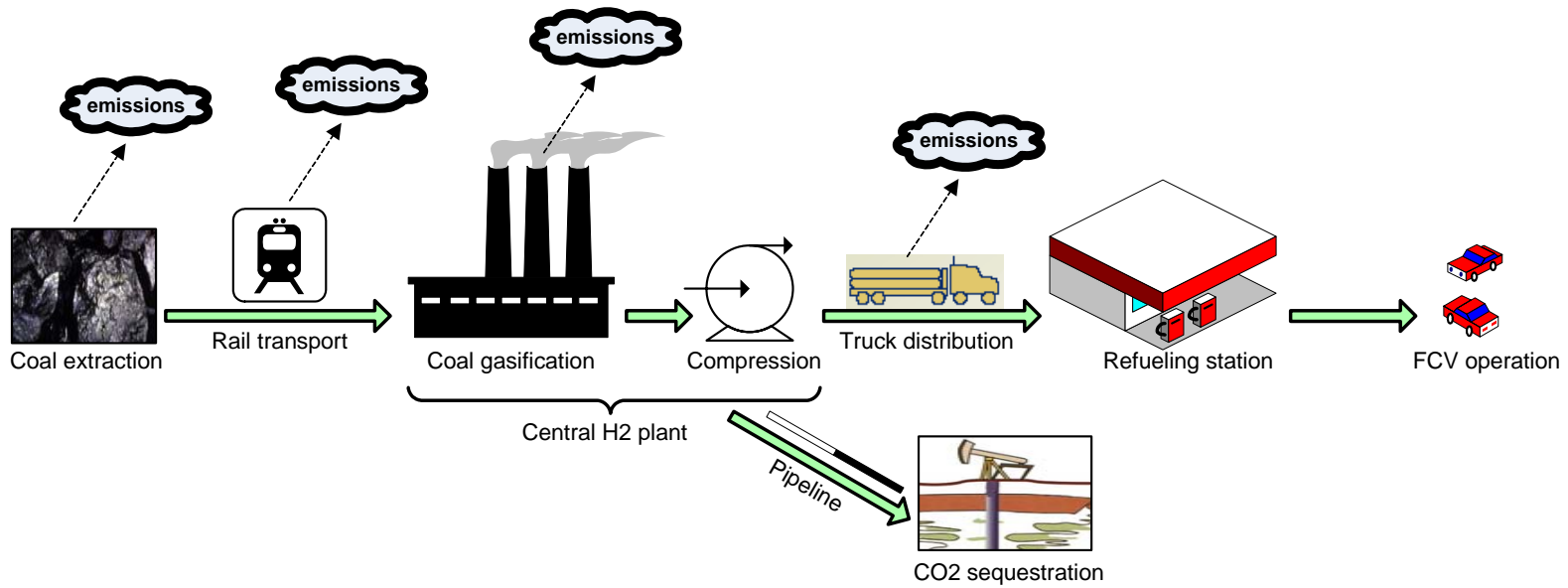
3. Elec-H2 pathway



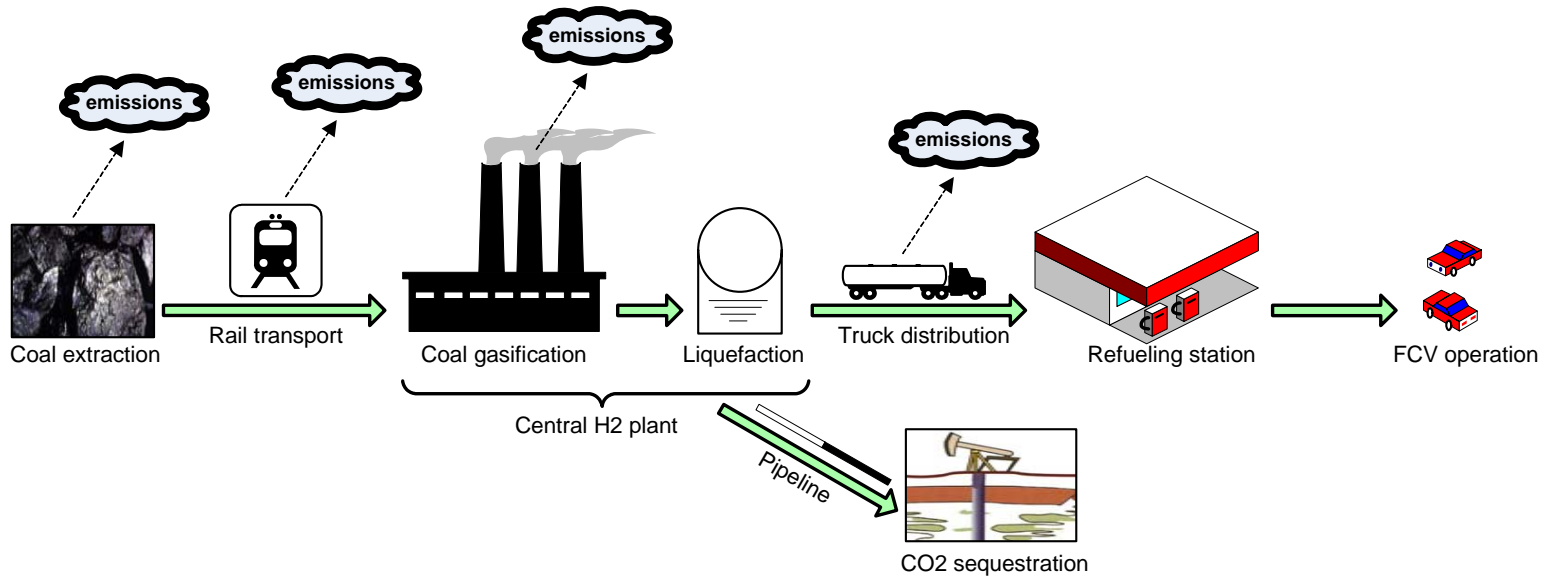
4. Coal-to-H2 pathway (pipeline)



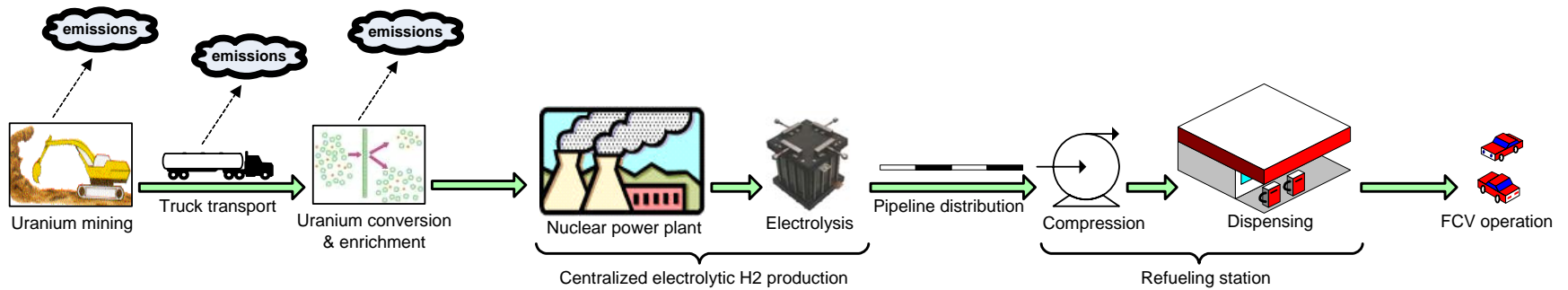
5. Coal-to-H2 pathway (compressed H2)



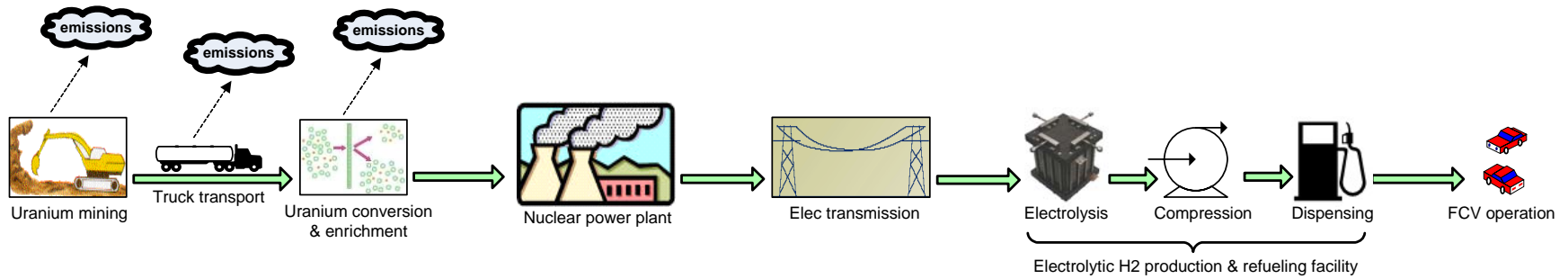
6. Coal-to-H2 pathway (Liquefied H2)



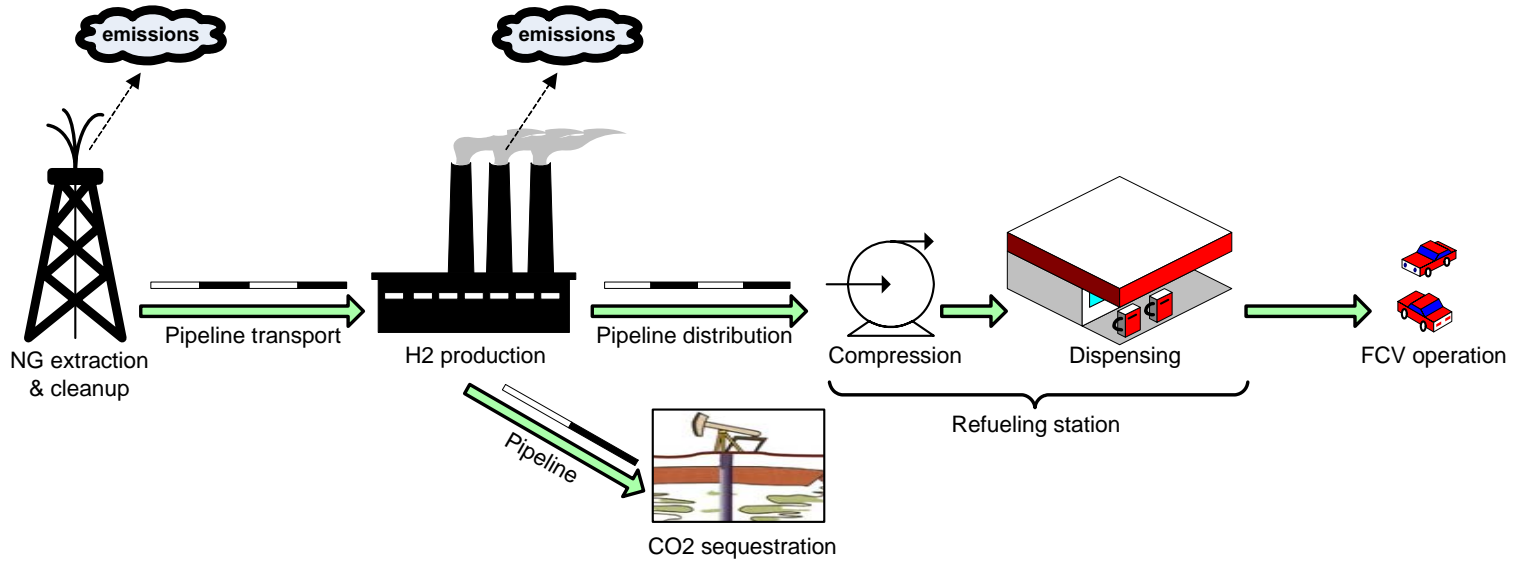
7. Uranium-to-H2 pathway (centralized)



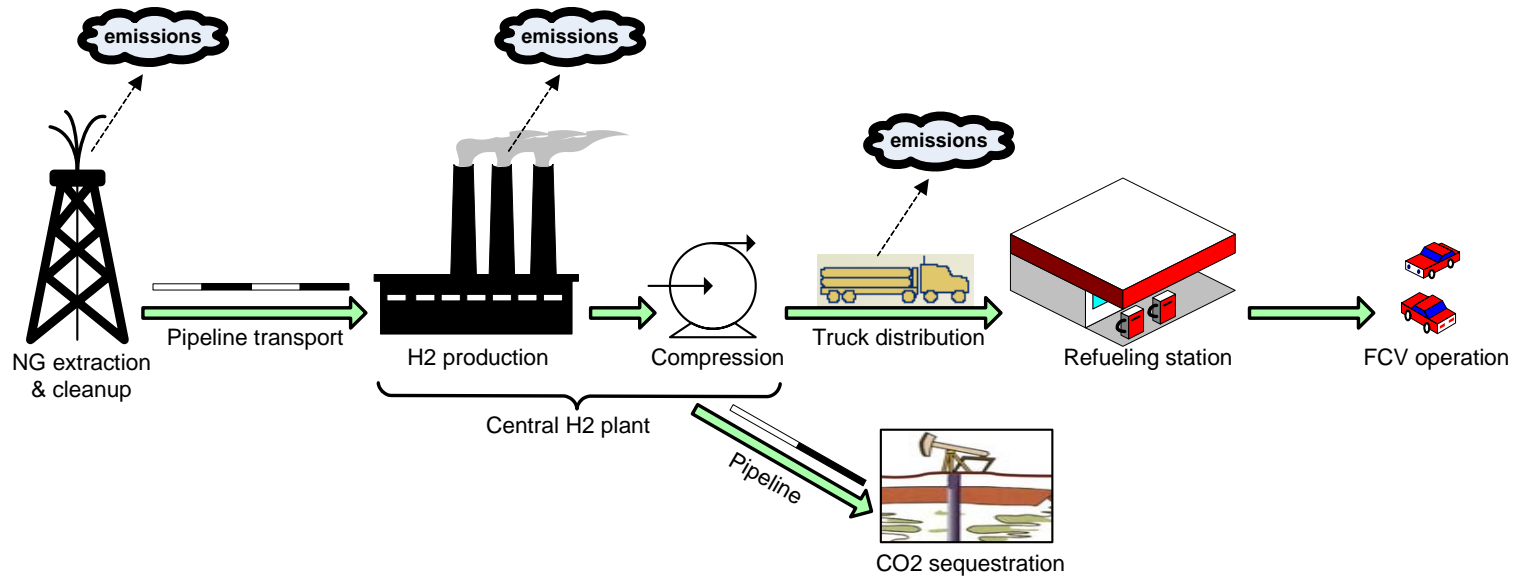
8. Uranium-to-H2 pathway (distributed, forecourt)



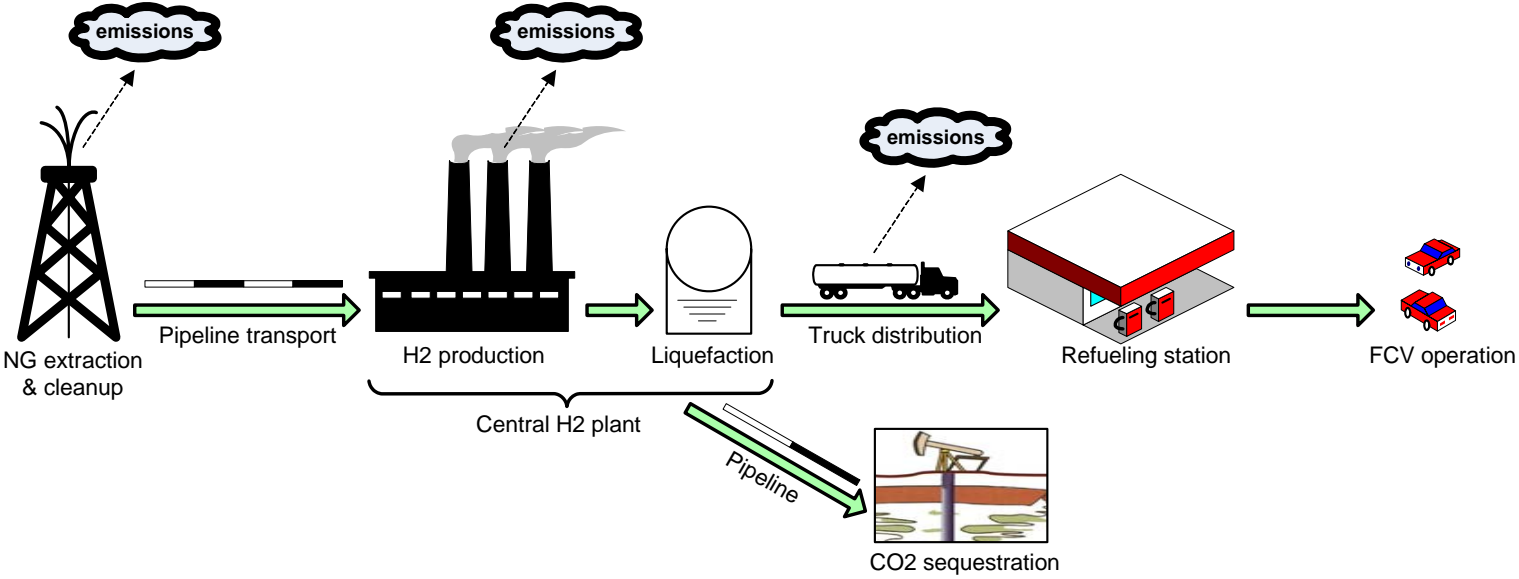
9. NG-to-H2 pathway (pipeline)



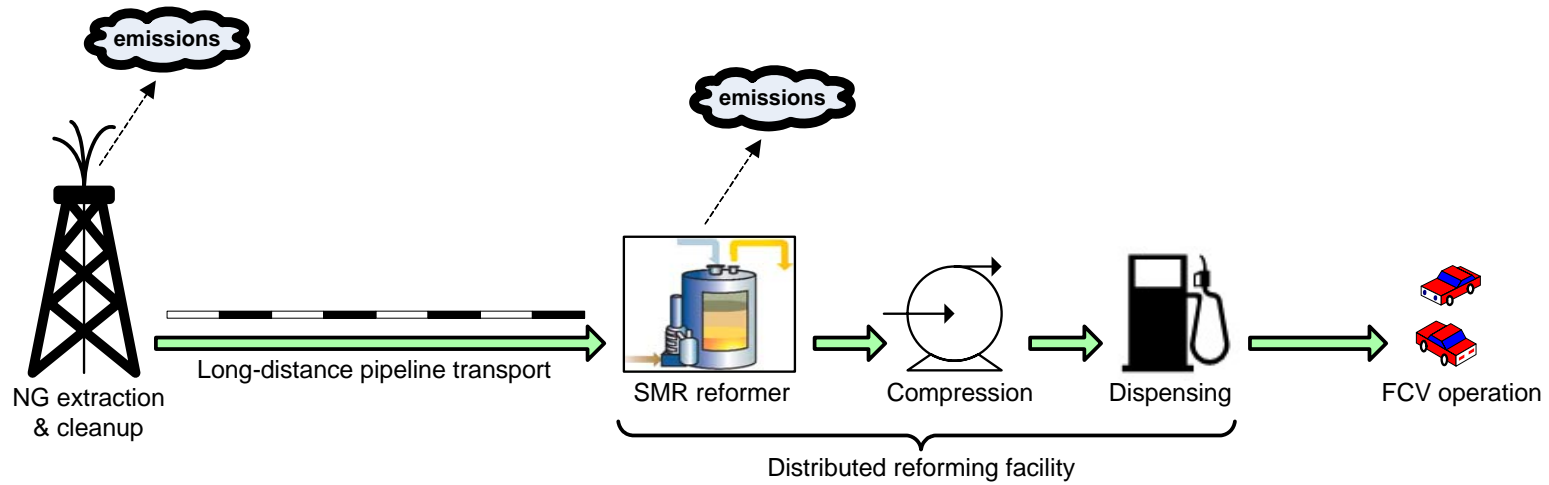
10. NG-to-H2 pathway (compressed H2)



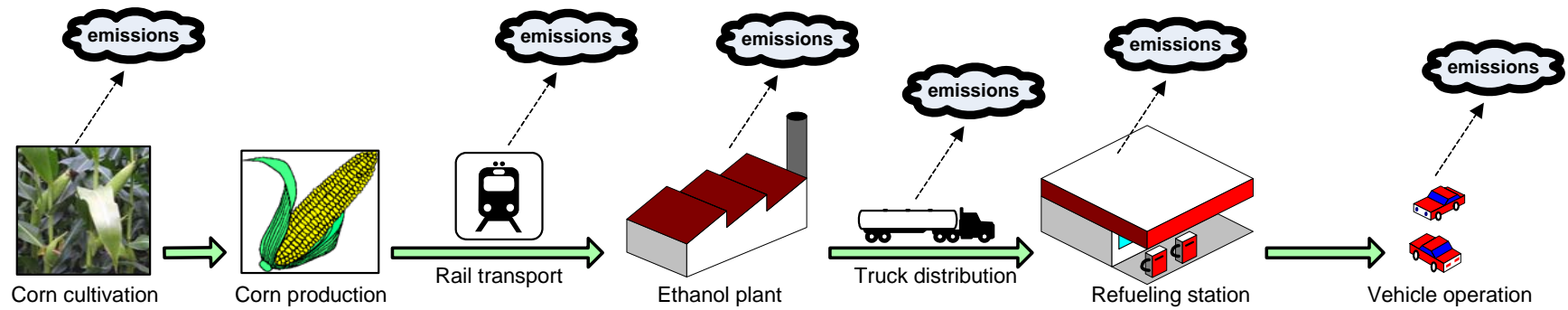
11. NG-to-H2 pathway (Liquefied H2)



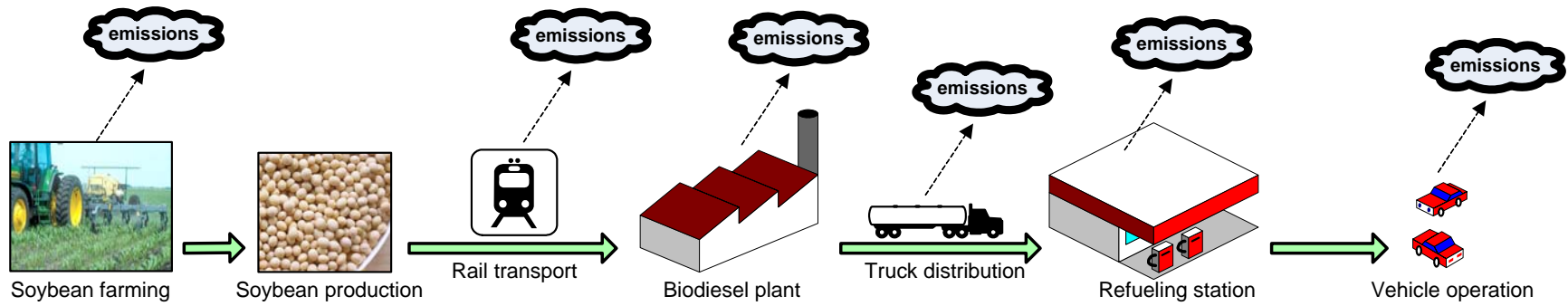
12. NG-to-H2 pathway (distributed, forecourt)



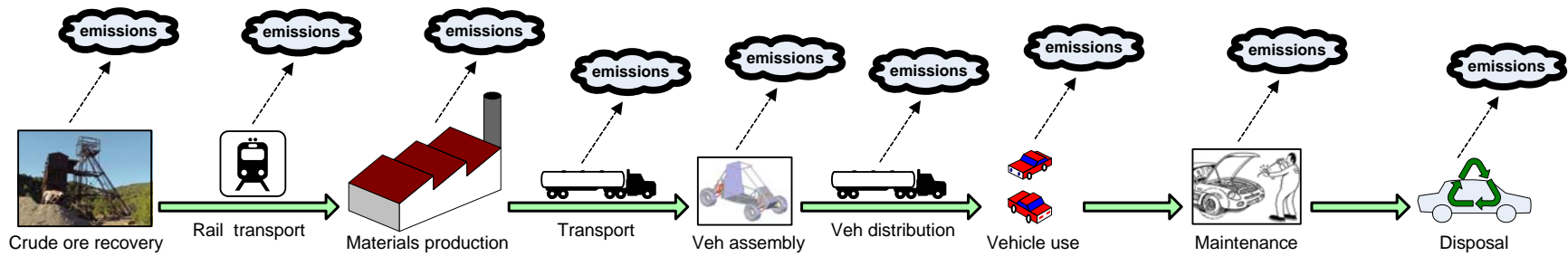
13. Corn to ethanol



14. Soybean to biodiesel

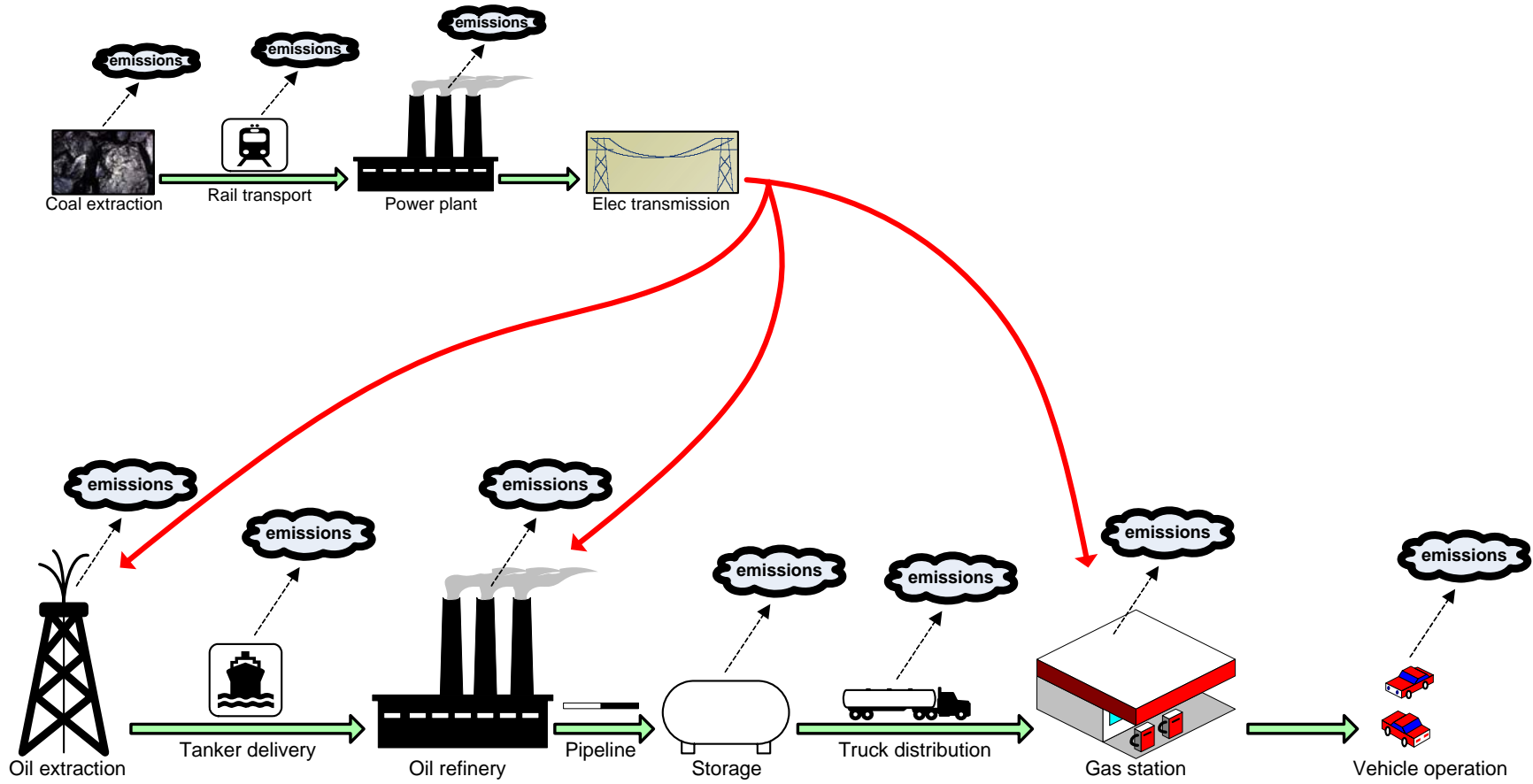


15. Vehicle cycle

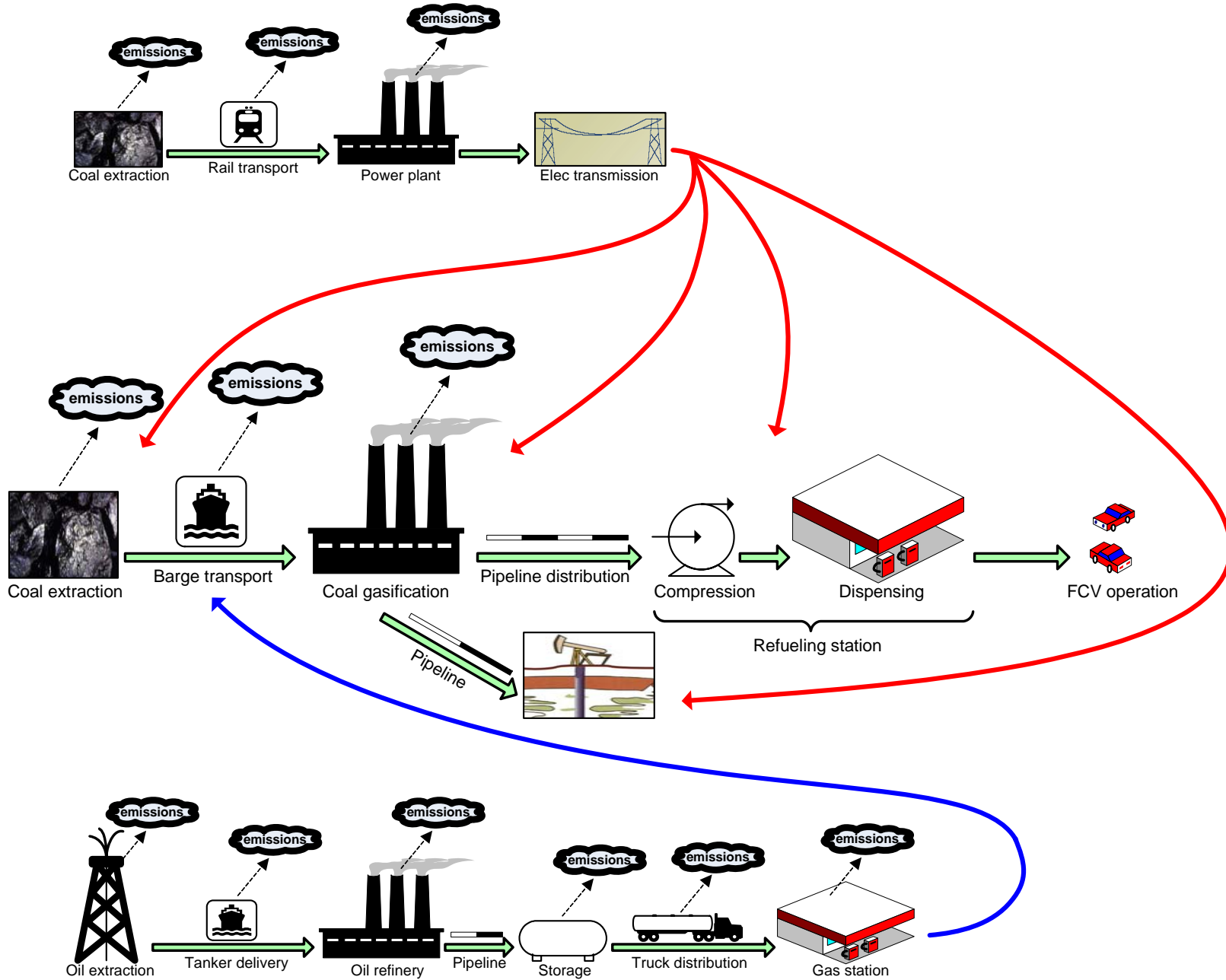


COMBINED (INTEGRATED) PATHWAYS

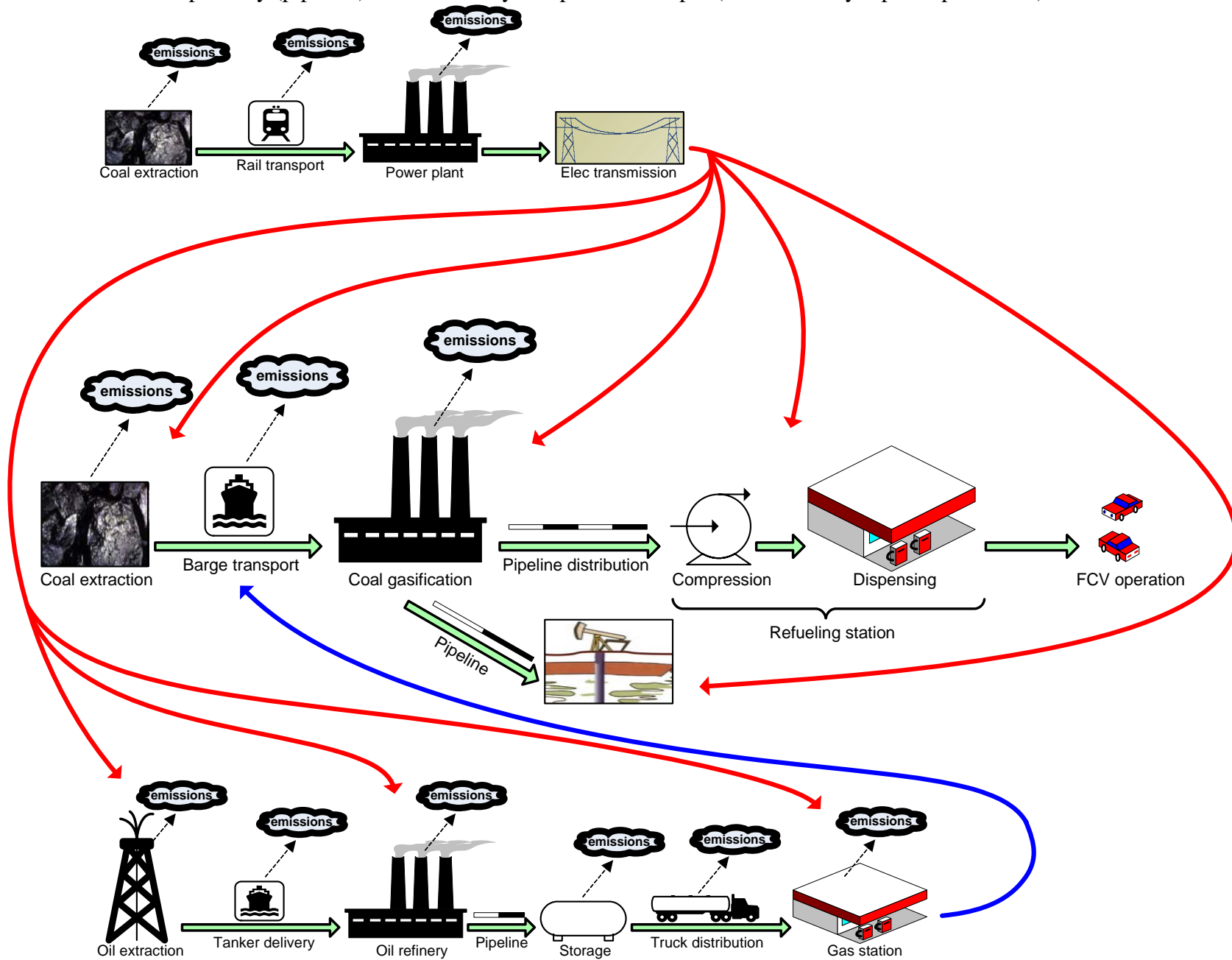
1. Petroleum pathway with electricity input



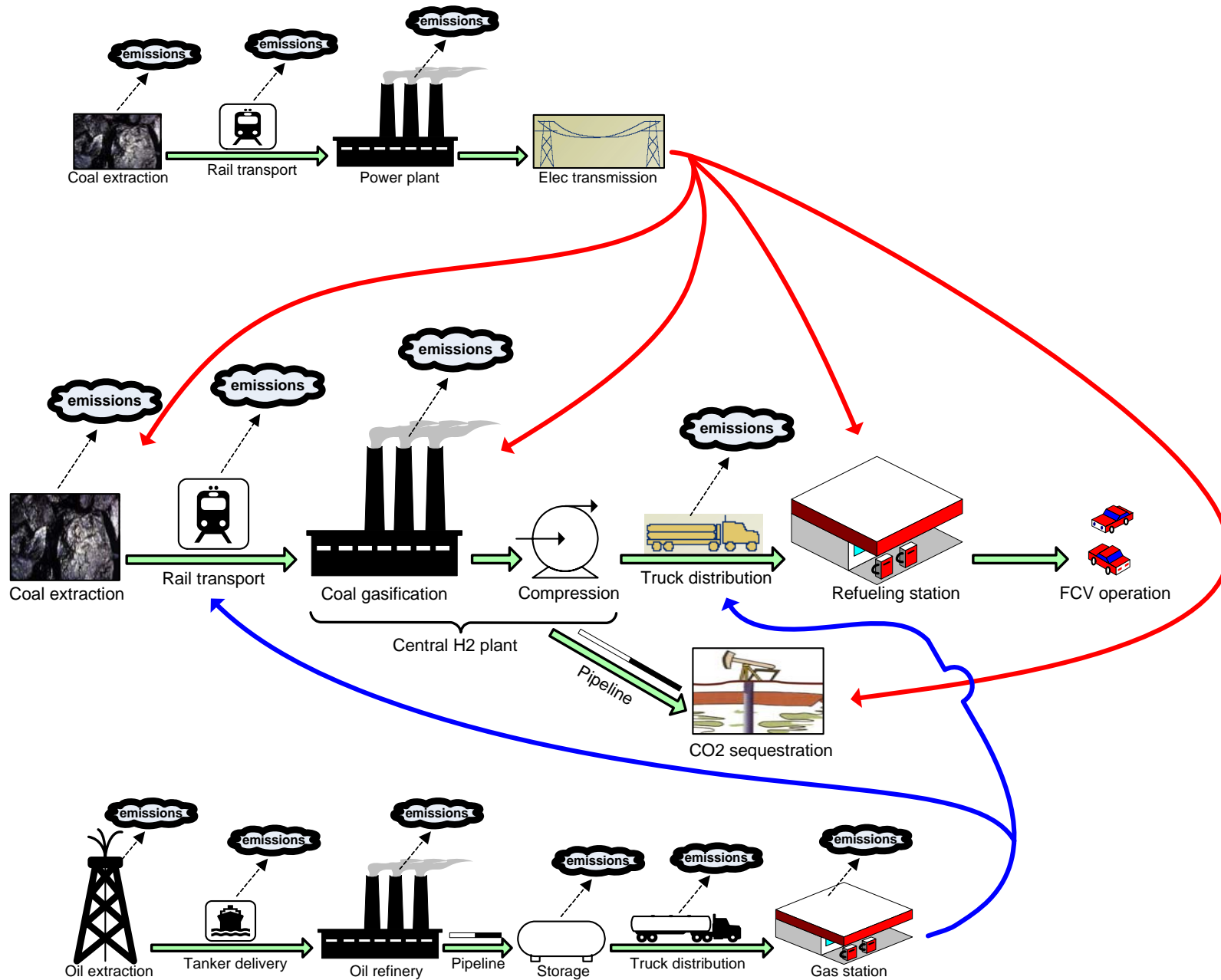
2. Coal-to-H2 pathway (pipeline) with electricity and petroleum input



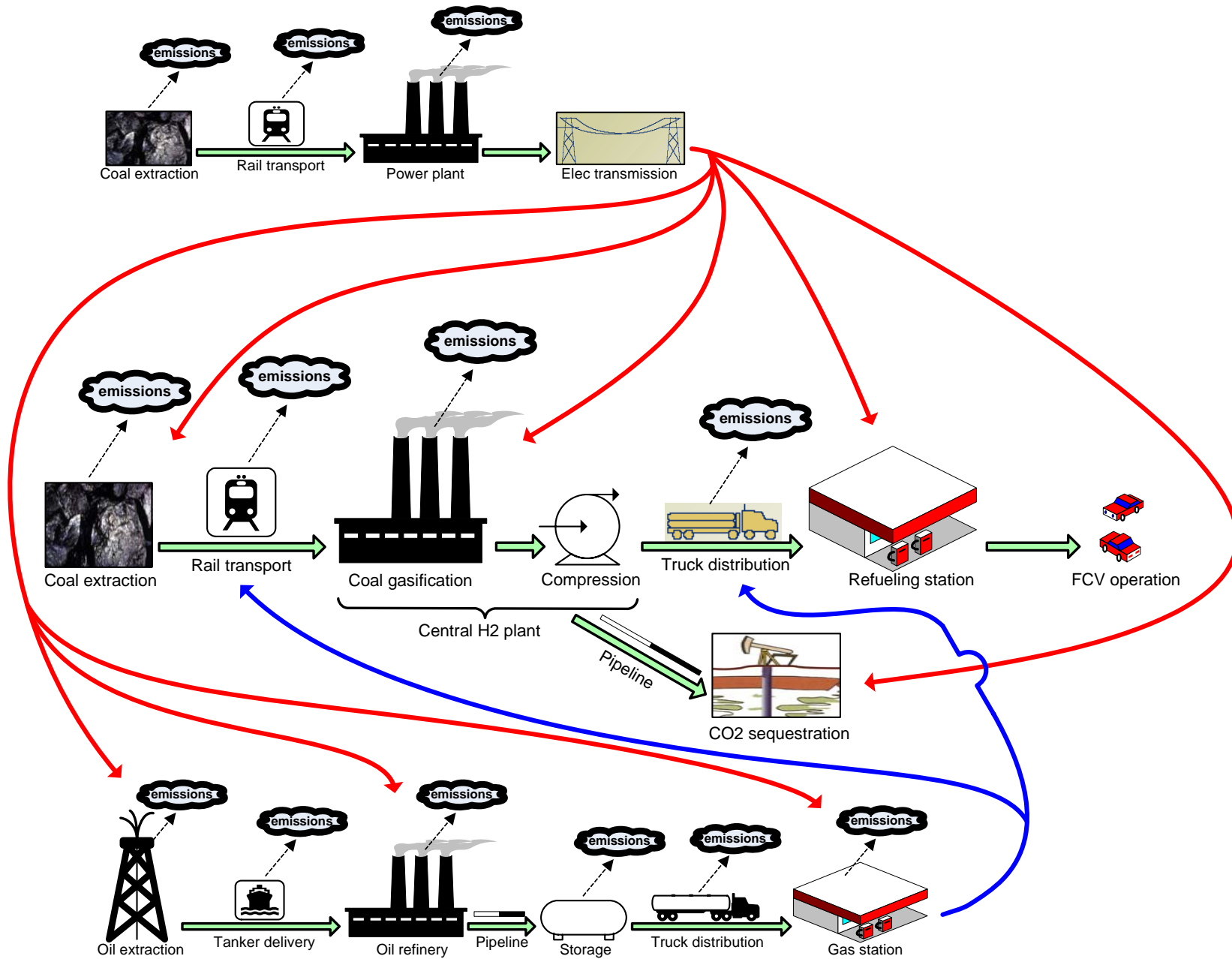
3. Coal-to-H2 pathway (pipeline) with electricity and petroleum input (and electricity input to petroleum)



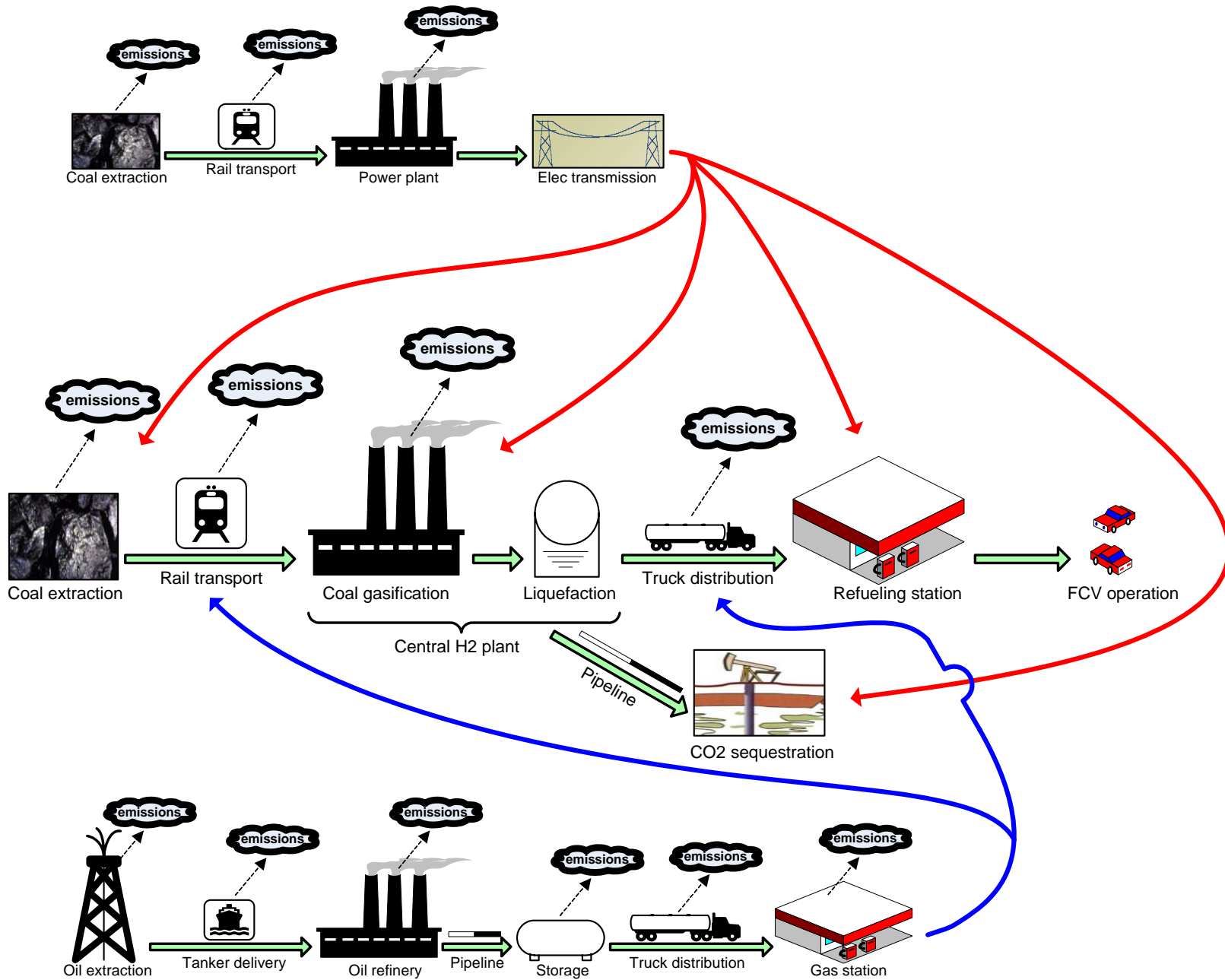
4. Coal-to-H₂ pathway (compressed H₂) with electricity and petroleum input



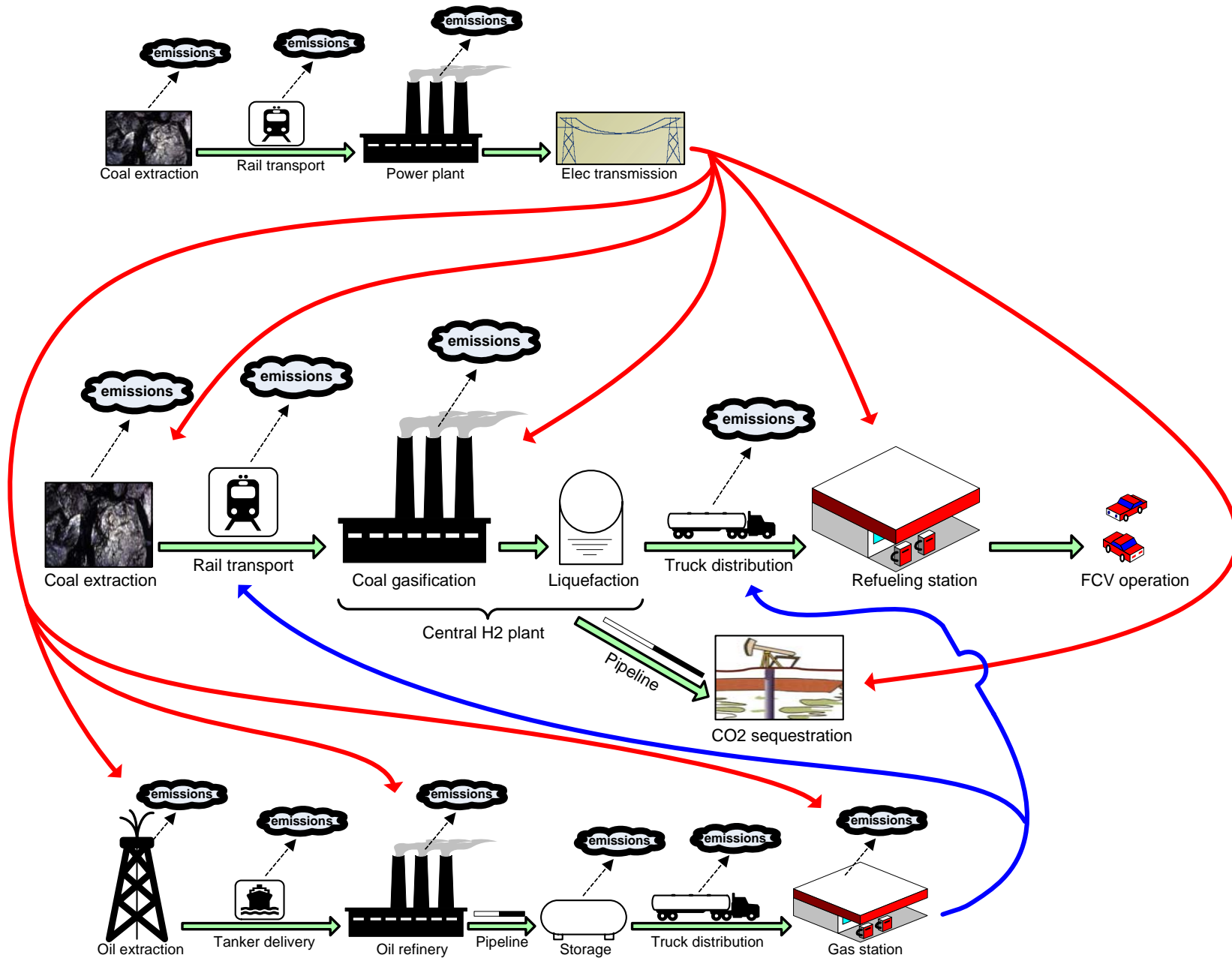
5. Coal-to-H2 pathway (compressed H2) with electricity and petroleum input (and electricity input to petroleum)



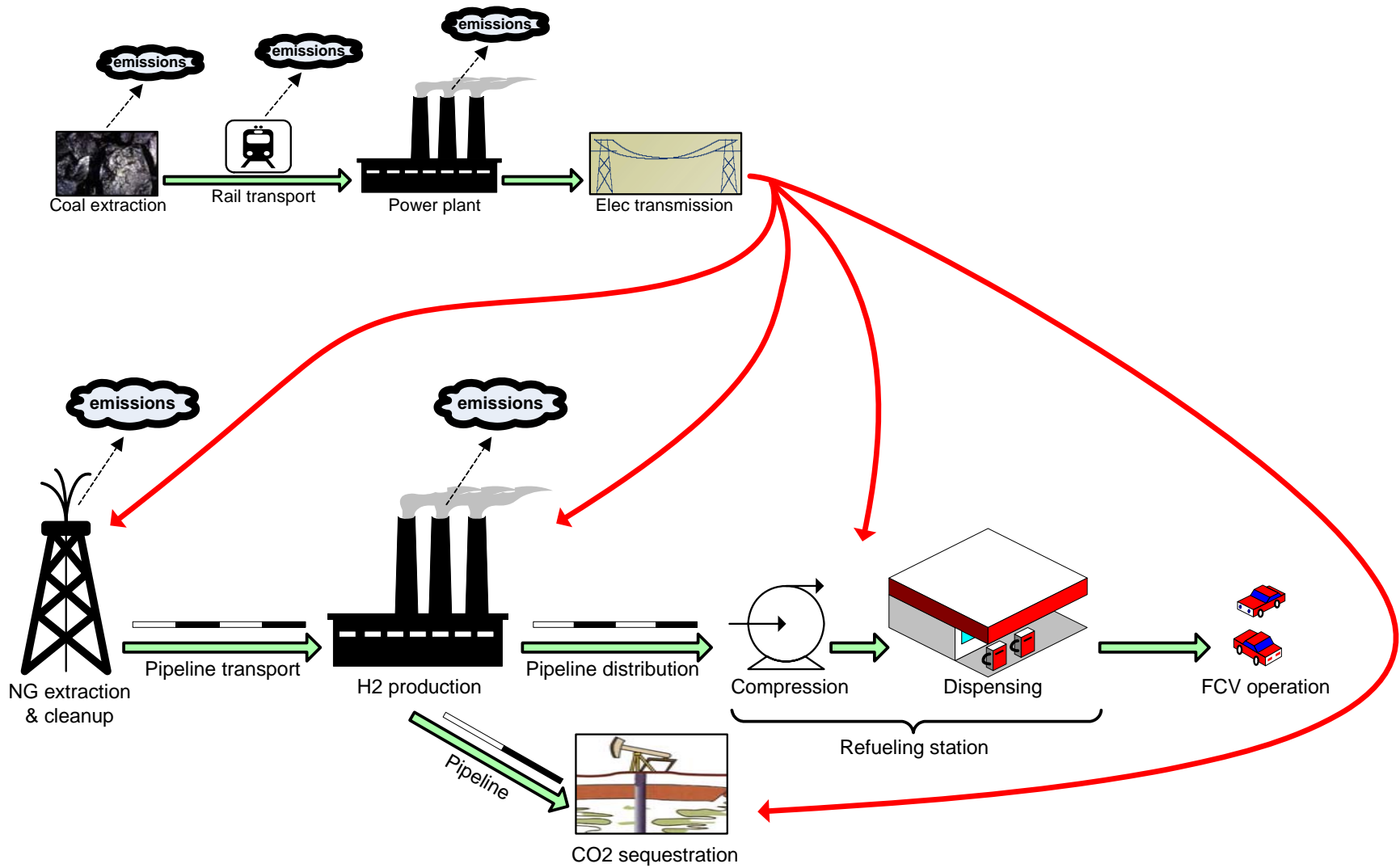
6. Coal-to-H2 pathway (Liquefied H2) with electricity and petroleum input



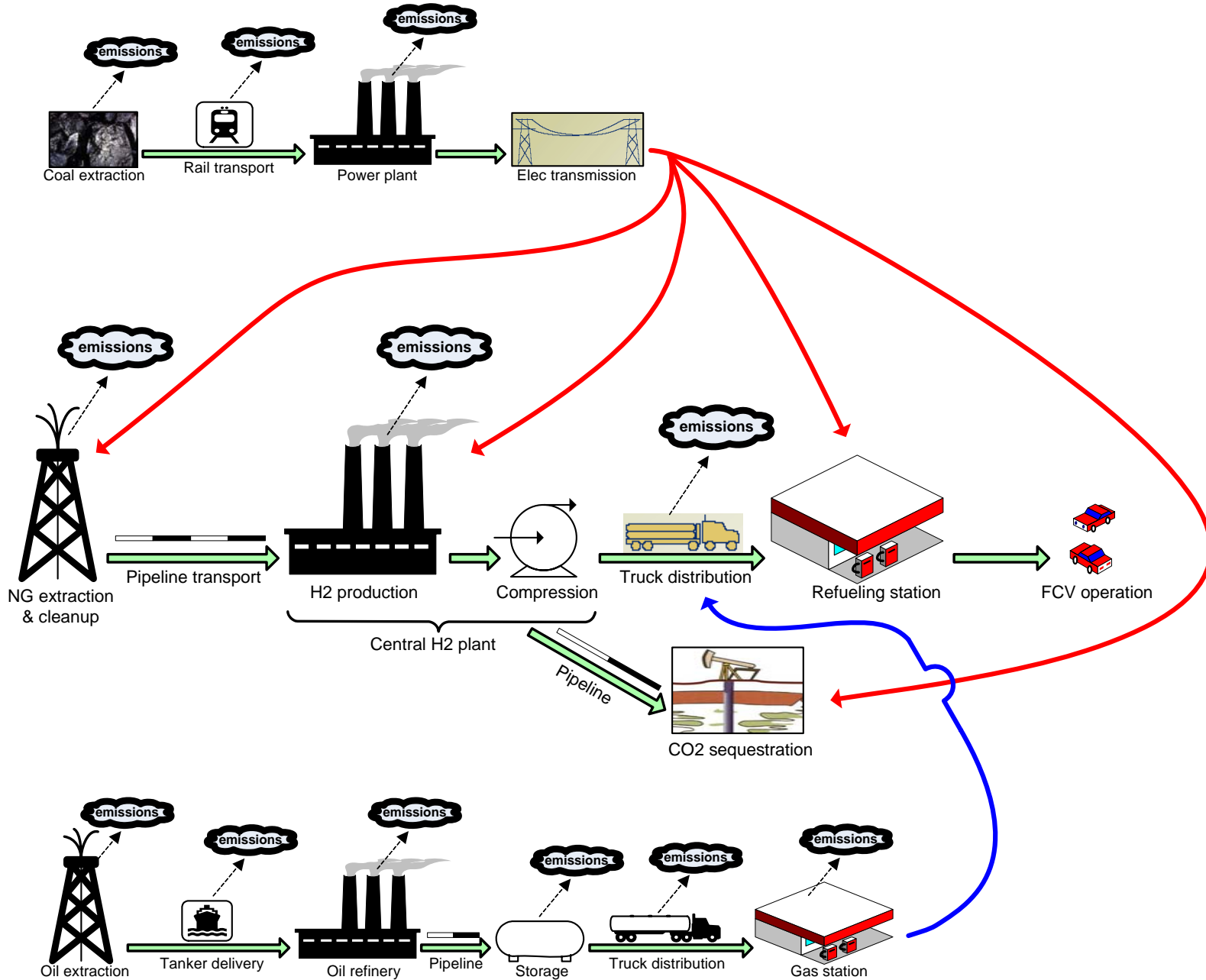
7. Coal-to-H2 pathway (Liquefied H2) with electricity and petroleum input (and electricity input to petroleum)



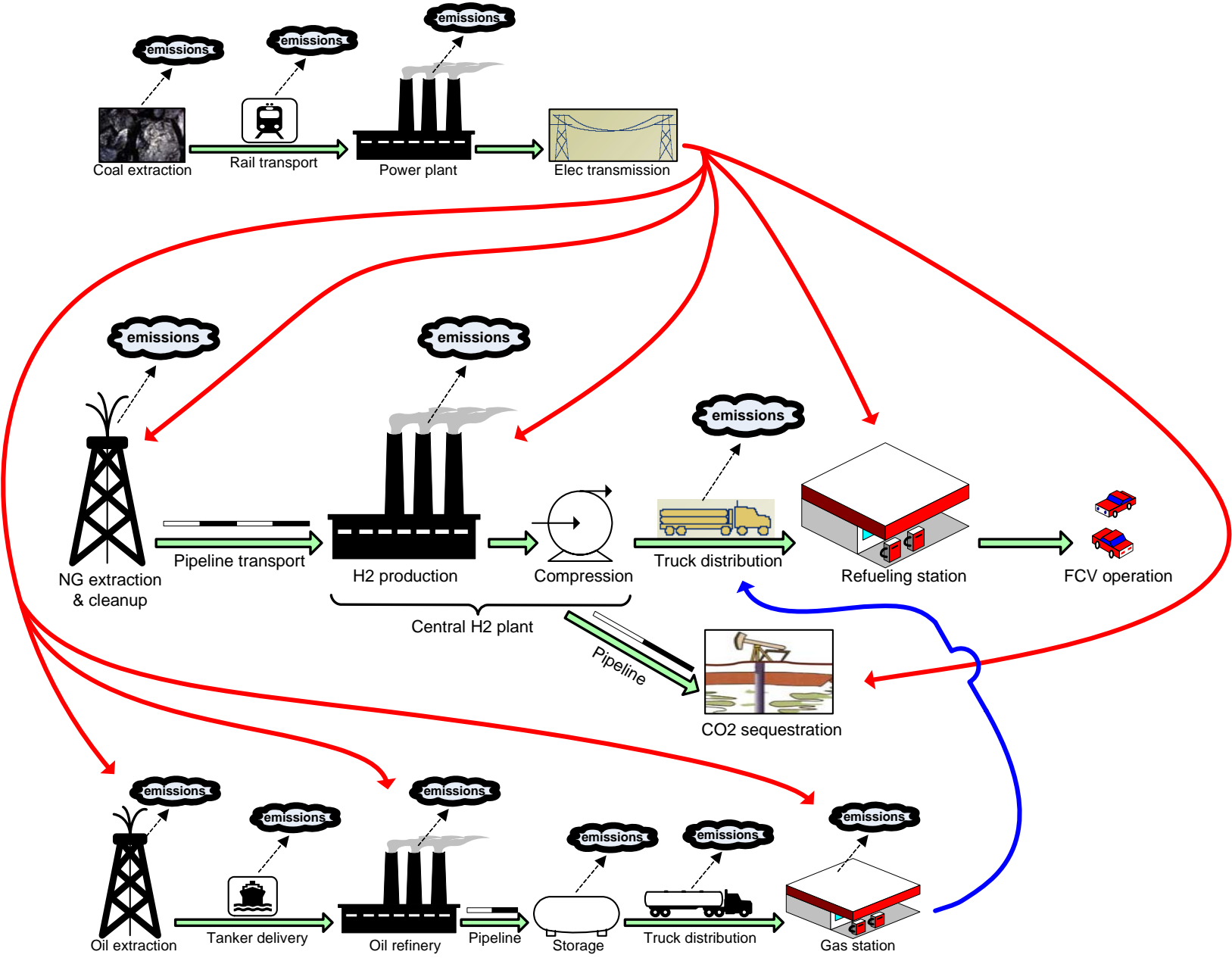
8. NG-to-H2 pathway (pipeline) with electricity input



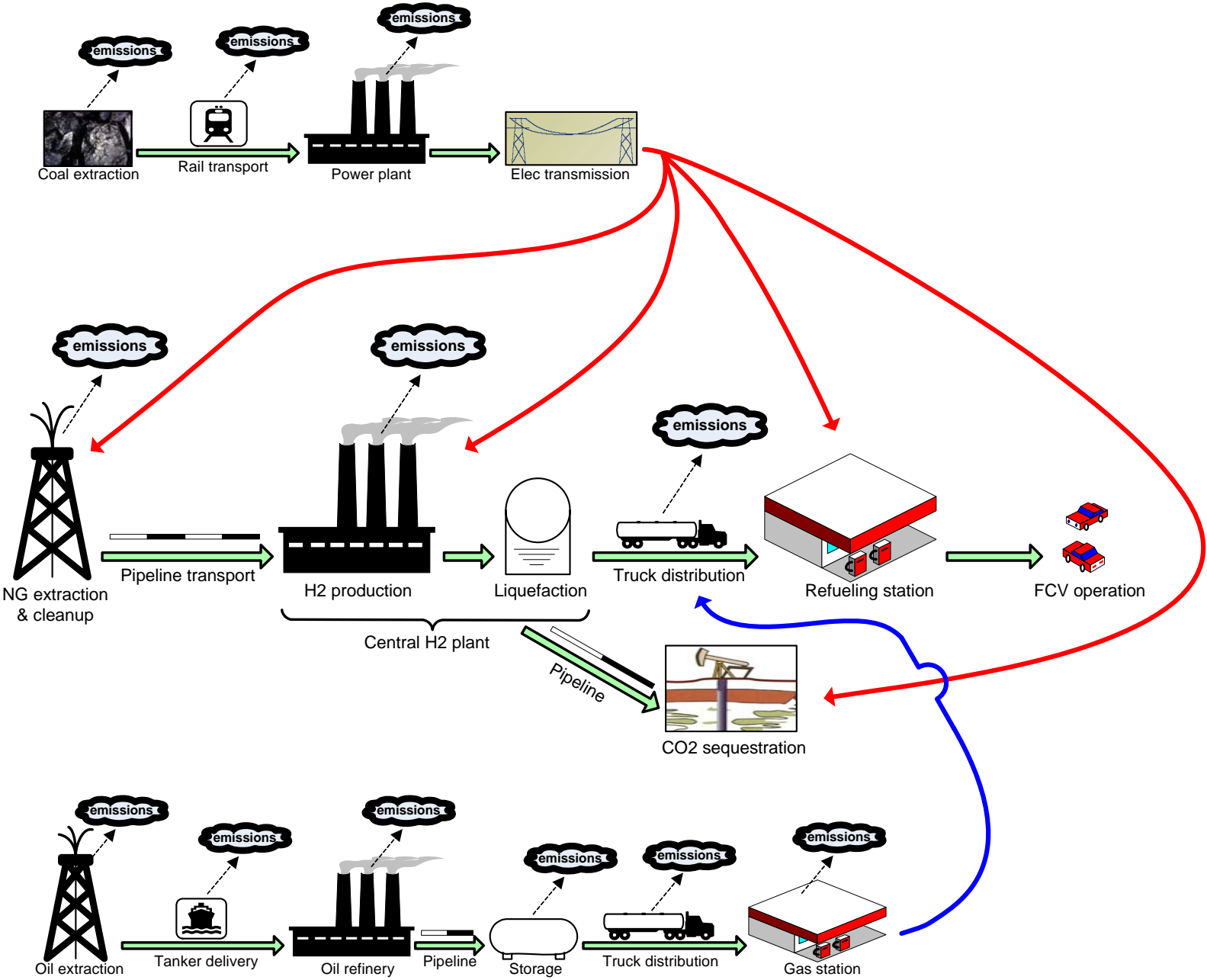
9. NG-to-H2 pathway (compressed H2) with electricity and petroleum input



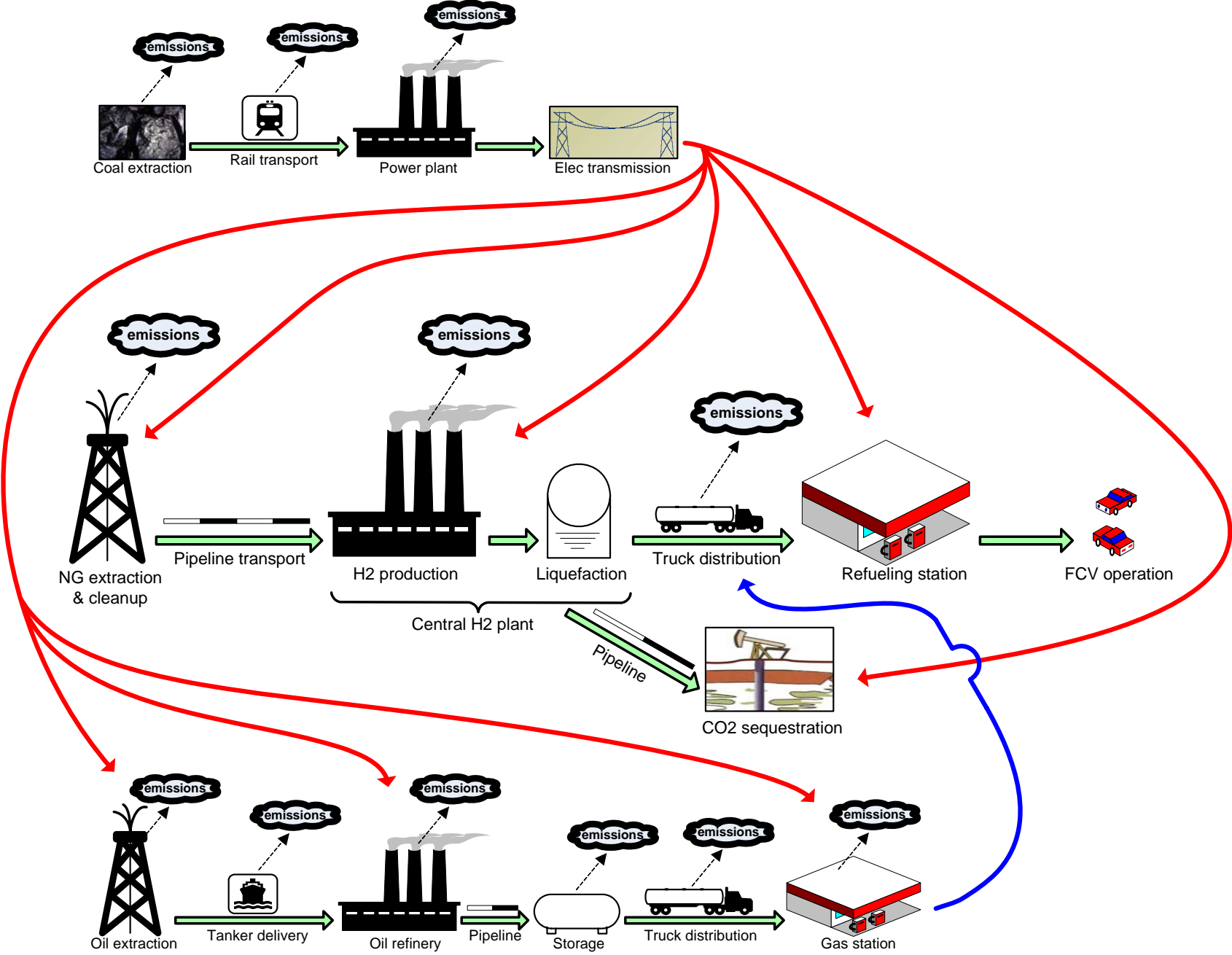
10. NG-to-H2 pathway (compressed H2) with electricity and petroleum input (and electricity input to petroleum)



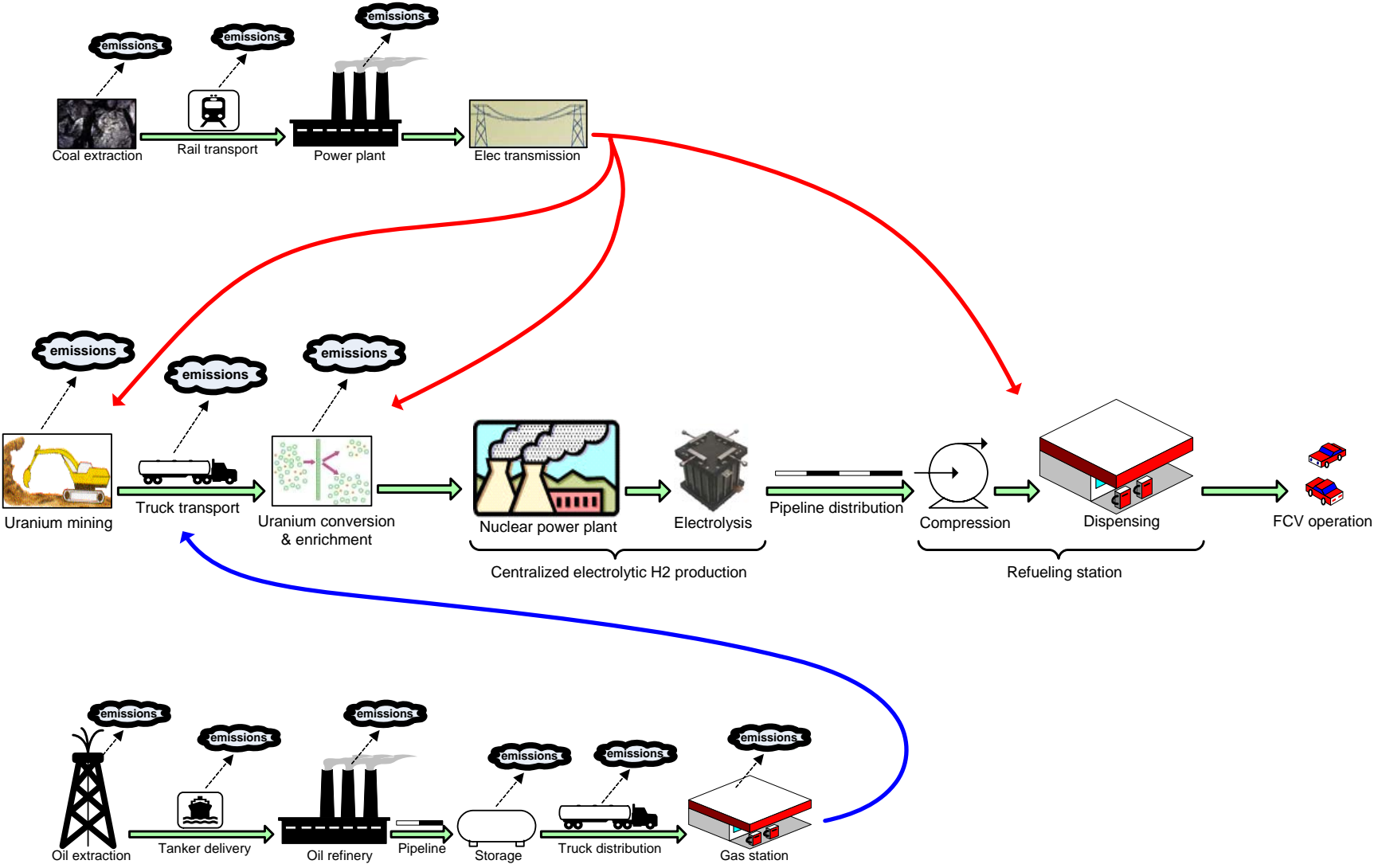
11. NG-to-H2 pathway (Liquefied H2) with electricity and petroleum input



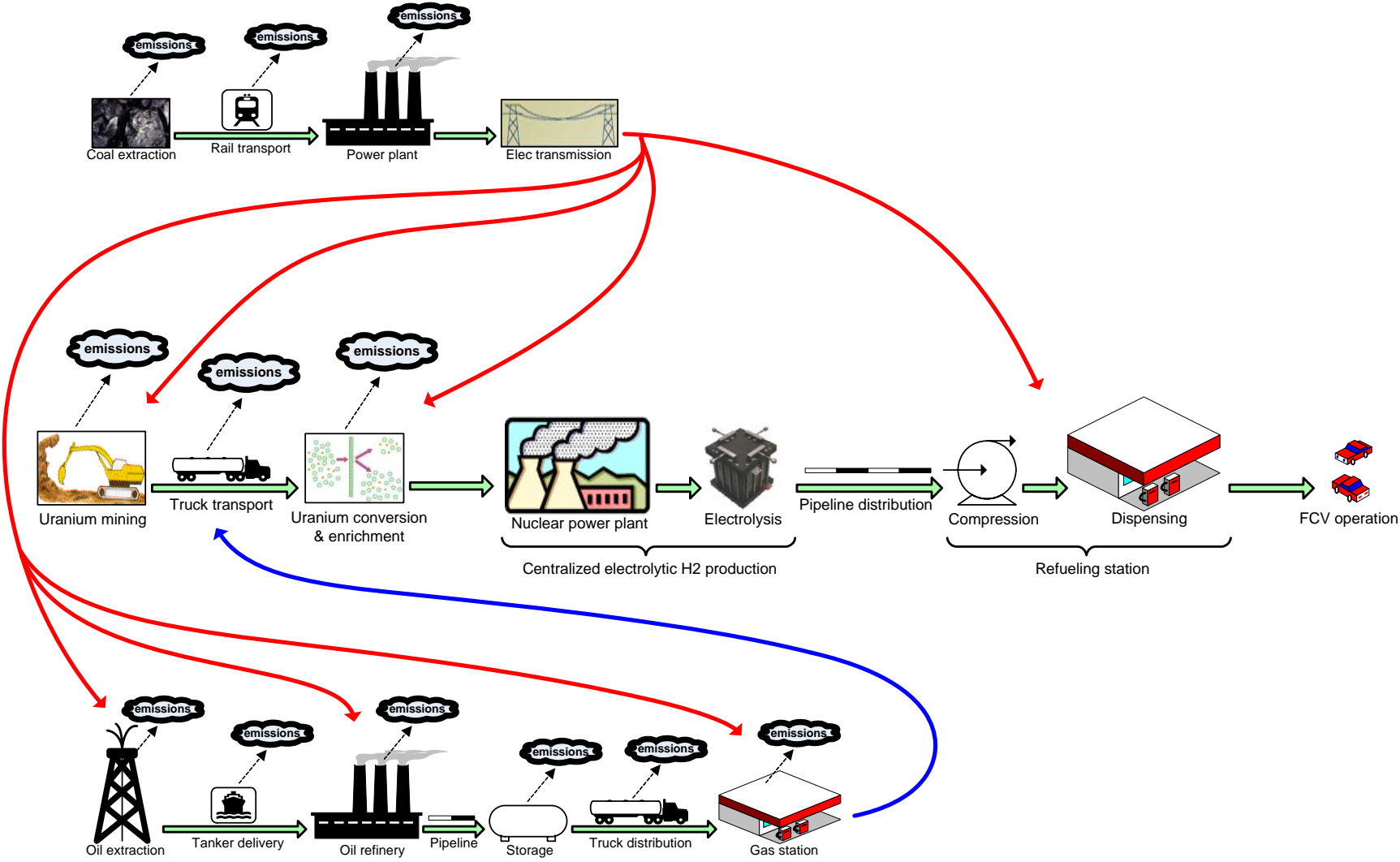
12. NG-to-H2 pathway (Liquefied H2) with electricity and petroleum input (and electricity input to petroleum)



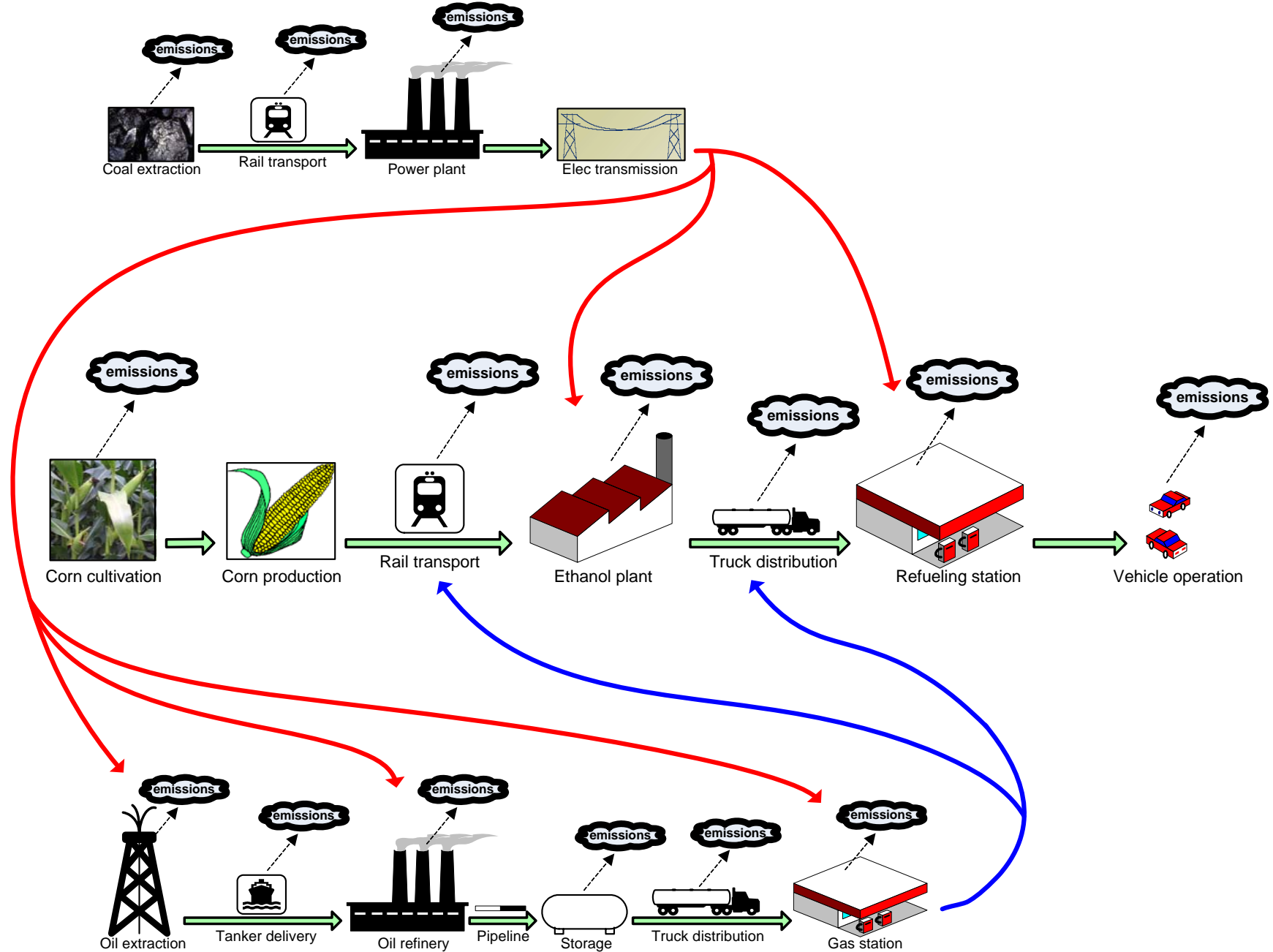
13. Uranium-to-H2 pathway (centralized) with electricity and petroleum input



14. Uranium-to-H2 pathway (centralized) with electricity and petroleum input (and electricity input to petroleum)



15. Corn-to-ethanol pathway with electricity and petroleum input:



16. Soybean-to-biodiesel pathway with electricity and petroleum input:

