

R&D GREET 1 Quiz

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Answer these questions using R&D GREET 1, R&D GREET 2, a calculator, and your notes from the session.



GREAT PLAINS
INSTITUTE

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U.S. Department of
ENERGY

* Required

* This form will record your name, please fill your name.

1. Complete the equation: [Well-to-wheels emissions] - _____ = [Well-to-pump emissions]

*

Vehicle operation emissions

2. What does the clear (white) cell indicate in the R&D GREET model?

clear cells are primarily for calculations and secondary assumptions

3. Which color cells should you primarily change? Select all that apply. *

Peach

Blue

Grey

Yellow

Clear

4. The Electric R&D GREET1 2023 Worksheet is briefly described in the R&D GREET model as calculations of energy use, emissions, and water consumption for _____?

electricity generation

5. The Ag_Inputs R&D GREET1 2023 Worksheet is briefly described in the R&D GREET model as calculations of energy use, emissions, and water consumption for manufacturing agricultural inputs including _____? *

fertilizers, herbicides, and insecticides, and manufacturing agricultural machinery

6. What are the four major sections of each worksheet in R&D GREET? *

Key Input Parameters, Shares of Combustion Processes, Calculation Tables, and Summary Tables

7. Which greenhouse gases are used (by default and assumed to have positive global warming potential) in R&D GREET? Select all that apply. *

N₂O

SO_x

CO₂

NO_x

CH₄

8. How far is forest residue transported from a forest field to an ethanol plant, and by what vehicle? *

90 miles by a heavy-duty truck

9. Model a spark-ignition internal combustion engine vehicle fueled by gasoline in R&D GREET. All other settings are considered default.

a. What are the well-to-pump GHG emissions in g CO₂e/MJ? =

b. What are the well-to-wheels GHG emissions in g CO₂e/MJ? =

c. What is the carbon intensity (CI) score associated with this scenario? =

a = 17 g CO₂e/MJ; b = 90 g CO₂e/MJ; c = 90 g CO₂e/MJ

10. Model a **compression-ignition direct injection** internal combustion engine vehicle fueled by diesel and used in the Midwest in R&D GREET. All other settings are considered default.
- What are the well-to-pump GHG emissions in g CO₂e/MJ? =
 - What are the well-to-wheels GHG emissions in g CO₂e/MJ? =
 - What is the carbon intensity (CI) score associated with this scenario? = *

a = 16 g CO₂e/MJ; b = 92 g CO₂e/MJ; c = 92 g CO₂e/MJ

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