Energy enthalpies, ΔH and energy profiles.

1. Consider the complete combustion of propene gas (C_3H_6) with O_2 gas at SLC.
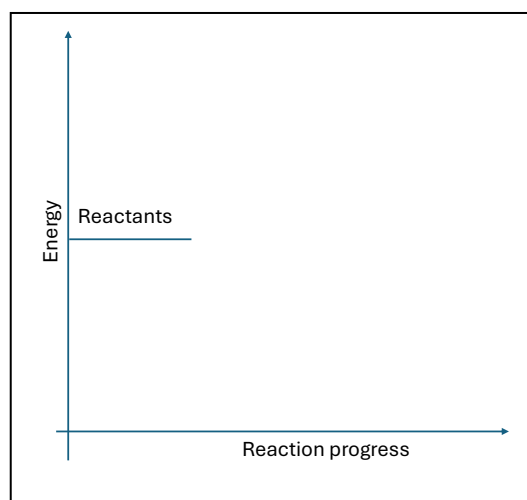   a. Write the balanced chemical equation for this reaction.

   _____

   b. Calculate the ΔH for the equation given as the answer to a. above, using bond energies.

   c. Complete the energy profile shown on the right. Indicate the

      i. *ΔH*

      ii. *activation energy and its value in kJ.*

      iii. *energy released during bond formation.*

2. Consider the complete combustion of liquid but-1-ene gas (C_4H_8) with O_2 gas at SLC.
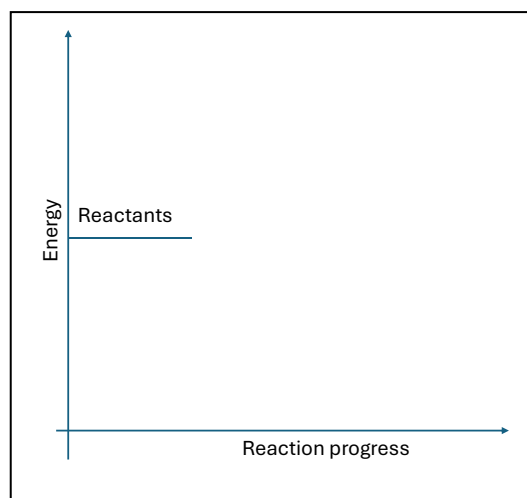   c. Write the balanced chemical equation for this reaction.

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   d. Calculate the ΔH for the equation given as the answer to a. above, using bond energies.

   c. Complete the energy profile shown on the right. Indicate the

      i. *ΔH*

      ii. *activation energy and its value in kJ.*

      iii. *energy released during bond formation.*

3.   Consider the overall, steam reformation reaction involving methane gas. This involves the reaction between methane gas and steam to produce carbon dioxide and hydrogen gas.

   a.   Write the balanced chemical equation for this reaction.

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   b.   Calculate the ΔH for the equation given as the answer to a. above, using bond energies.

   c.   Complete the energy profile shown on the right. Indicate the

      i. ΔH

      ii.   activation energy and its value in kJ.

      iii.   energy released during bond formation.