

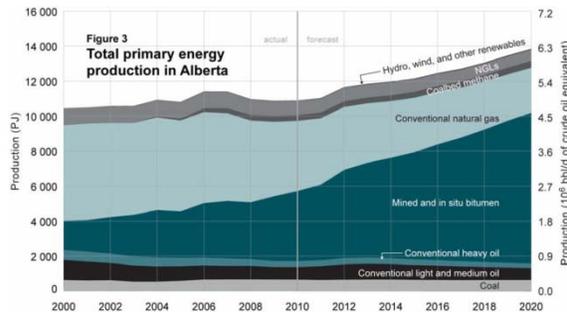
BUEC 488: Introduction to Energy & Resource Industries

2011 Midterm Exam

Multiple choice:

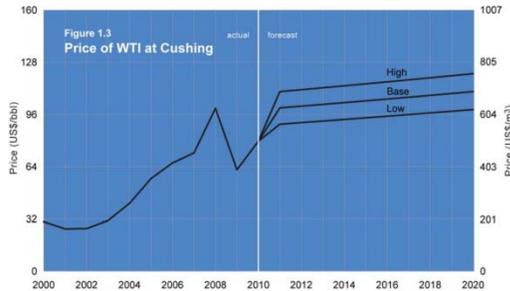
1. Which of the following companies operate both oilsands mines and in situ extraction facilities:
 - a. Devon Energy
 - b. Syncrude
 - c. Laricina Energy
 - d. Suncor Energy**
 - e. All of the above

2. In the year 2010, approximately what proportion of Alberta's fossil fuel energy production was made up of mined and in situ bitumen, conventional light, and conventional heavy oil.
 - a. 10%
 - b. 25%
 - c. 55%**
 - d. 90%



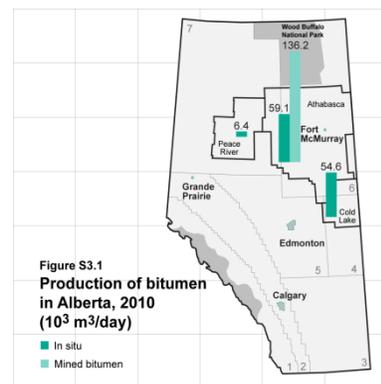
3. Which statement best describes the ERCB's most recent forecasts in terms of future oilsands production between now and 2020
 - a. Increase to 3.75 million barrels per day, with 90% of new growth coming from in situ
 - b. Increase to 4.85 million barrels per day, with growth in both in situ and mining
 - c. Increase to 3.75 million barrels per day with 90% of the growth due to new mining operations
 - d. Increase to 3.75 million barrels per day, with a little over half of the growth coming from in situ**
 - e. Increase to 4.85 million barrels per day, with a little over half of the growth coming from in situ

4. The ERCB expects the price for West Texas Intermediate crude oil at Cushing to be
- Between \$100/bbl and \$125/bbl in 2020**
 - Greater than \$125/bbl by 2020
 - Less than \$80/bbl by 2020
 - They don't provide a forecast because it is too uncertain
 - None of the above



5. Alberta's oil reserves (including oilsands) are evaluated by the ERCB at approximately
- 270 billion barrels
 - 800 million barrels
 - 170 billion barrels**
 - 1.5 trillion barrels
6. Which of the following countries is/are not among the world's top 5 oil consumers, according to current EIA data?
- Iran**
 - China
 - Russia
 - a and b
 - None of the above
7. Which of the following countries is/are in both the world's top-5 oil producers and consumers?
- China
 - Russia
 - Brazil
 - A and B**
 - All of the above

8. Alberta's oilsands can be found in the area surrounding:
- Peace River
 - Fort McMurray
 - Cold Lake
 - All of the above**
 - None of the above



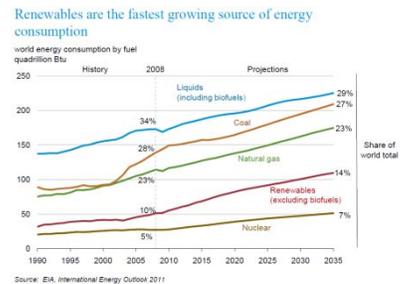
9. The TransMountain pipeline expansion project is proposed by which pipeline company?
- KinderMorgan**
 - Interpipeline
 - Enbridge

d. TransCanada

10. Canadian firms filing reserves reports under NI-51-101 must report:
- Proved reserves based on the average of the previous 12 months' prices
 - Proved and proved + probable reserves based on the average of the previous 12 months' prices
 - Proved reserves based on forecast changes in prices and costs
 - Proved and proved + probable reserves based on forecast changes in prices and costs**
11. US-listed firms filing reserves data under SEC guidelines must report:
- Proved reserves based on the average of the previous 12 months' prices**
 - Proved and proved + probable reserves based on the average of the previous 12 months' prices
 - Proved reserves based on forecast changes in prices and costs
 - Proved and proved + probable reserves based on forecast changes in prices and costs
 -
12. A heavy, sour oil product is one which is:
- High in sulphur, with high viscosity**
 - Low in sulphur with high water content
 - High in sulphur, with low viscosity
 - Low in sulphur, with high viscosity
 - None of the above

Hint: Viscosity of water is 1 cps, viscosity of molasses is approximately 5,000-10,000cps, and viscosity of peanut butter is approximately 150,000cps

13. 2010 average daily oil production for Syncrude was approximately:
- 290 thousand barrels per day**
 - 160 thousand barrels per day
 - 410 thousand barrels per day
 - 87 thousand barrels per day

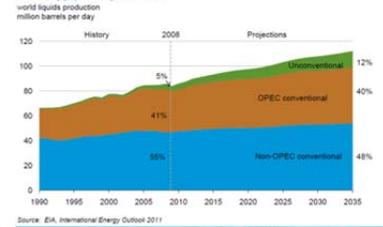


14. The EIA projects that global coal use will
- Peak in 2025 and then decline
 - Remain relatively constant at 2010 levels through 2035
 - Decrease slowly as renewable generation increases between now and 2035
 - Increase steadily through at least 2035**
 - None of the above
15. In Alberta, drilling permits are issued by:
- Alberta Energy
 - Alberta Environment
 - Sustainable Resources Development
 - The Energy Resources Conservation Board**
 - None of the above

16. The share of unconventional heavy oil (including oilsands) is 5% of world liquid fuels supplies today. By 2035, the EIA predicts that share will increase to:

- a. 8%
- b. 12%**
- c. 20%
- d. 25%
- e. 30%

Unconventional liquids become increasingly important in the total supply of liquid fuels



17. Which of the following companies split from EnCana in 2009?

- a. Canadian Natural
- b. Cenovus Energy**
- c. Pan Canadian Petroleum
- d. Penn West Petroleum

18. Which of the following would be described as shale gas plays?

- a. Marcellus
- b. Bakken
- c. Eagle Ford
- d. Barnett
- e. All of the above**

19. World oil production and consumption in 2010 was approximately

- a. 62 million barrels per day
- b. 45 million barrels per day
- c. 152 million barrels per day
- d. 87 million barrels per day**
- e. 32 billion barrels per day

20. World total proved oil reserves in 2009 (the last point of data on the slide) were approximately:

- a. 1300 billion barrels**
- b. 350 billion barrels
- c. 800 billion barrels
- d. 2600 billion barrels

21. Enhanced oil recovery refers to:

- a. Producing a lighter, or partially upgraded product
- b. Producing a product with less sand
- c. Injecting water, steam, heat, etc. to increase oil production
- d. Injecting CO2 to increase oil production
- e. C or D**

22. Prospective resources include petroleum for which there is estimated to be:

- a. A chance of discovery
- b. A chance of development
- c. A and B**
- d. None of the above

23. Contingent resources may include petroleum for which there is estimated to be:
- a. A chance of discovery
 - b. A chance that economic conditions will develop which allow its profitable extraction
 - c. A chance that legal impediments to development will be removed
 - d. B and C**
 - e. All of the above
24. A checklist for inclusion in reserves filings might include:
- a. Economic viability
 - b. Market for sales volumes
 - c. Infrastructure in place or available
 - d. Reasonable expectation that all internal and external approvals will be in place
 - e. All of the above**
25. Proved reserves are reserves that can be estimated with a high degree of certainty to be recoverable. What probabilities are used to define this *high degree of certainty* for the purposes of reserve filings?
- a. 50%
 - b. 70%
 - c. 90%**
 - d. 99%
 - e. 100%