



## FACULTY OF SCIENCE

### DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT & ENERGY STUDIES

<b>MODULE</b>	<b>ENS0037</b> ENERGY ECONOMICS
<b>CAMPUS</b>	<b>APK</b>
<b>EXAM</b>	<b>NOVEMBER 2016</b>

**DATE** 23 NOVEMBER 2016

**SESSION** 12:30 – 15:30

**ASSESSOR(S)**

**PROF JOHN LEDGER &  
MS LUNGILE MASHELE**

**EXTERNAL MODERATOR**

**RICHARD GOODE**

**DURATION** 3 HOURS

**MARKS** 100

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**NUMBER OF PAGES:** 3 PAGES

#### INSTRUCTIONS:

1. Please answer **ALL QUESTIONS**.
2. Each answer should be in the form of a comprehensive essay, with sketches and diagrams where these may be appropriate to enhance your answer.
3. Alternatively you may provide your answer in point form.

**QUESTION 1**

What are the common economic characteristics of infrastructure industries exhibited by the electricity industry, the typical lifecycle costs associated with the electricity industry and methods of revenue creation?

Why is the rationale for regulation?

[25]

**QUESTION 2**

Explain the concept of cost reflectivity as it relates to the following:

- Historical Cost and Depreciated Replacement Cost

In your answer make mention of the difference between the two methods, depreciation, levelised cost and return on assets.

[15]

**QUESTION 3**

What are the typical liquidity and funding problems associated with large infrastructure projects?

And what are some possible mitigants?

[20]

**QUESTION 4**

- What is a credit rating?
- Why is a credit rating important?
- What will a credit downgrade mean for South African banks funding infrastructure in Africa?

[20]

**QUESTION 5**

*“The letter, the contents of which were leaked to the Business Day, was sent last week by Eskom chairperson Dr Ben Ngubane, who indicated that the utility was unwilling to sign further power purchase agreements (PPAs) beyond the preferred projects selected under bid window 4.5 of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).” – Engineering News (21 July 2016)*

Was the decision taken by Eskom the right one? In your answer make mention of the following:

- Potential impact on the Eskom operating model
- Current electricity supply and demand conditions
- IPP bidding process
- Impact on green industries
- The future sustainability of the IPP office, Eskom and IPPs

[20]

**TOTAL [100]**

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