

## Problem 1

The student can analyze the problem using the tools reviewed in Lecture 6.

a) If there are regional differences in prices, it must be because of trade costs / limited transmission capacity. In theory, differences in mark-ups could also explain price differences, but this seems unlikely in the market for electricity.

b) More transmission capacity will lower / eliminate price differences. The student can use the RS-RD diagram to show this.

c) The student can use a PPF-type diagram similar to slide 9 in Lecture 6. For South, production will go down, consumption up. Better terms of trade means more consumption of all goods, whereas lower electricity price means more consumption of electricity and less of the other good. The consumer will end up on a higher indifference curve.

d) For North, production will increase and consumption is ambiguous. Better terms of trade means more consumption of all goods, whereas higher electricity prices means more consumption of the other good and less of electricity. The consumer will end up on a higher indifference curve.

e) Electricity prices will increase in the North which will increase income for the region as a whole (because they are a net exporter of electricity). Policymakers can therefore redistribute some of the earnings from e.g. power companies and municipalities to consumers.

f) With very low prices in the North (before the increase in transmission capacity), it was not profitable to invest in new electricity generation projects (hydro, wind, solar). With higher prices, it is likely that some projects become profitable. Then, the RS curve for North would shift to the right (and the combined RS curve for North and South). This would lead to even lower prices.

## Problem 2

The problem can be analyzed using the monopolistic competition model presented in Lecture slides 8, p15).

a) An increase in R&D costs raises  $F$ . This increases the slope of the CC curve while the PP curve does not change.

Therefore, the price will increase, mark-ups (over marginal costs) will increase, and the number of firms will go down.

b) An increase in market size ( $S$ ) would help, e.g. trade integration. Then we can potentially get back to the old equilibrium. In both a) and b) the student should explain the economic intuition behind the findings.