The Framework of the Potential Clean Energy Model of Azerbaijan

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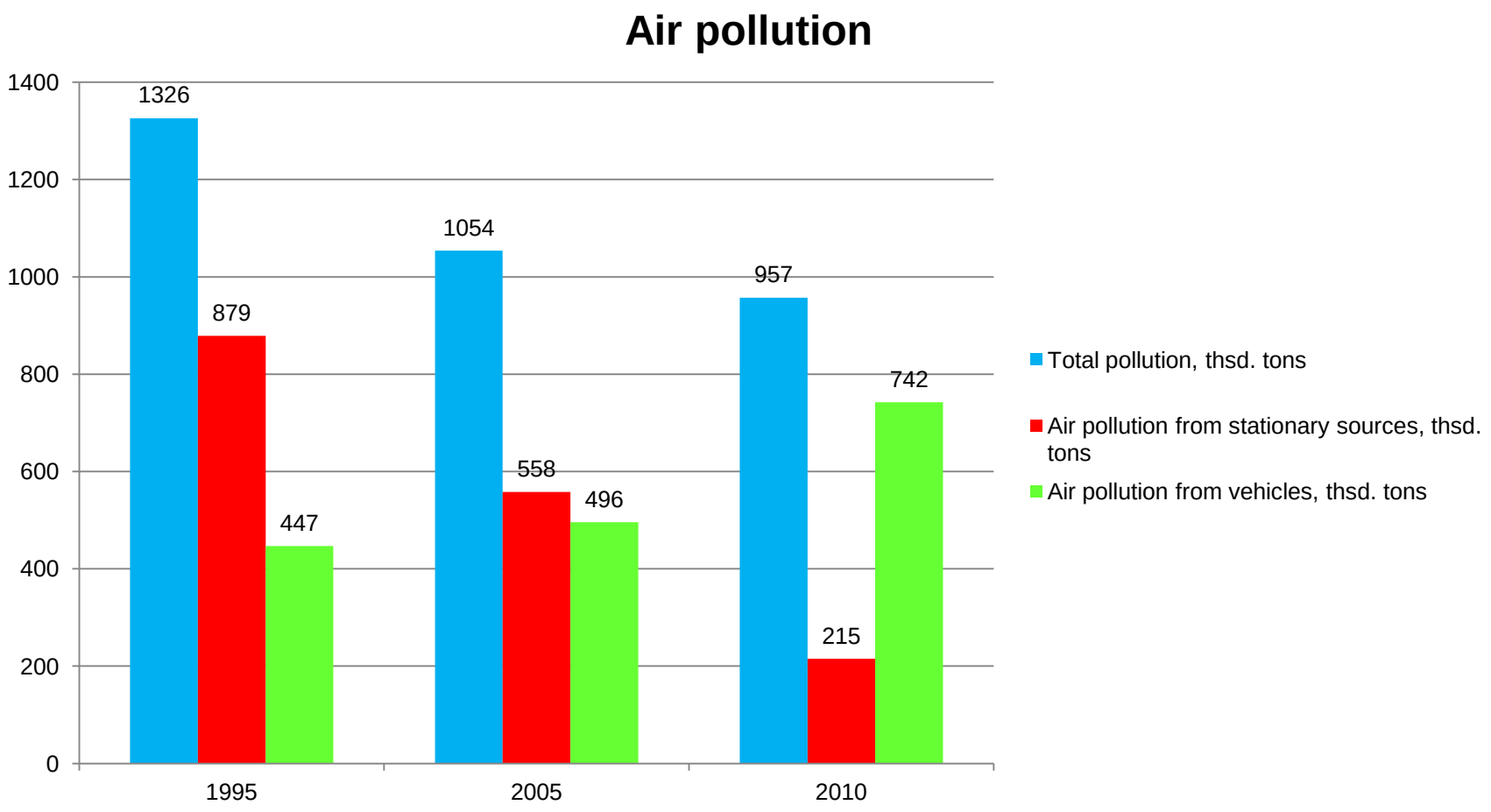
Background

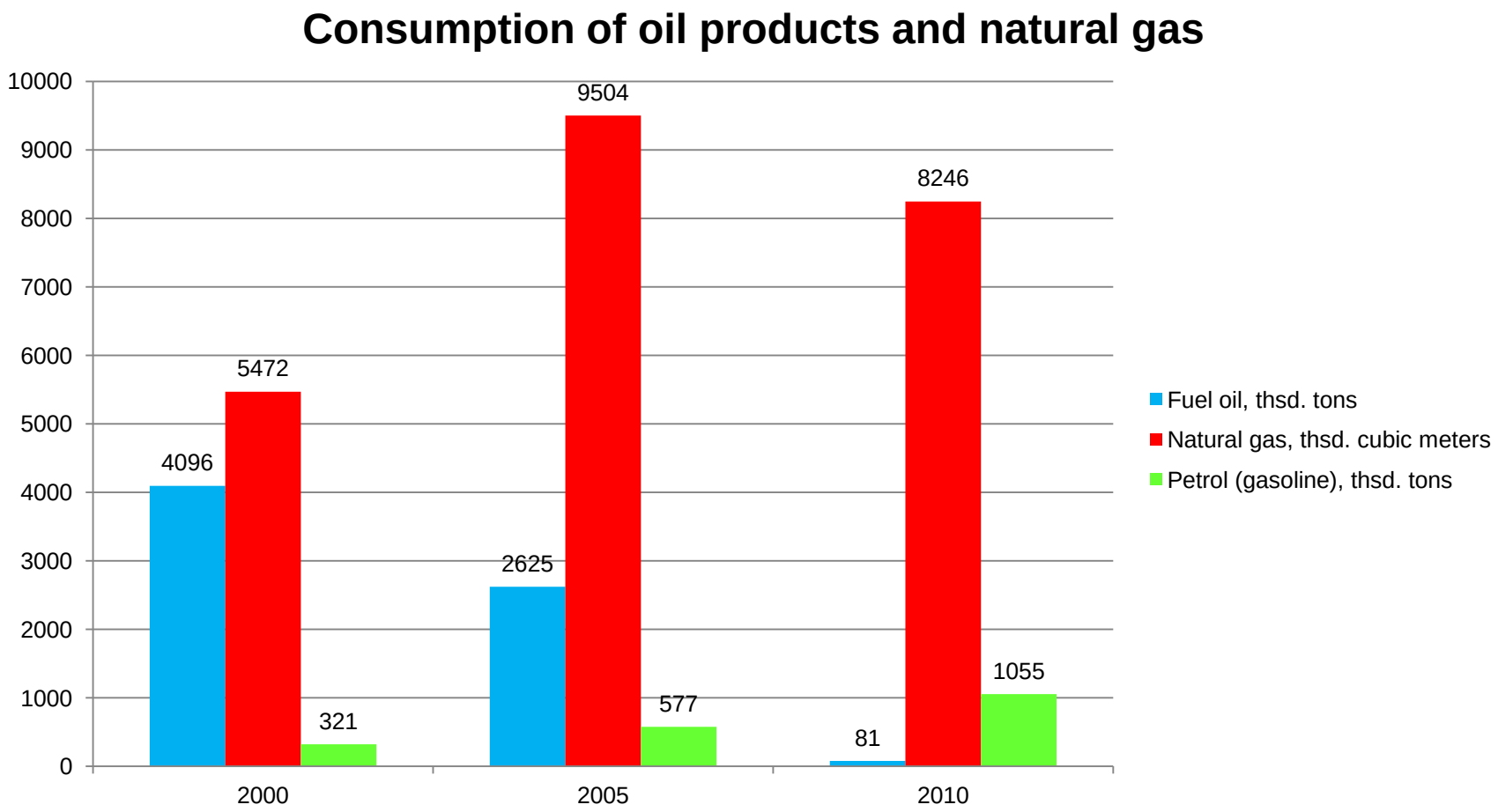
Global climate change

- Higher temperature (1.5^{o}C-1.6^{o}C from 2021 to 2050)
- Higher sea level (the sea level might rise by 150cm)
- Higher illness rates (malaria)
- Higher fresh water shortage (23 % reduction of surface water resources from 2021 to 2050)

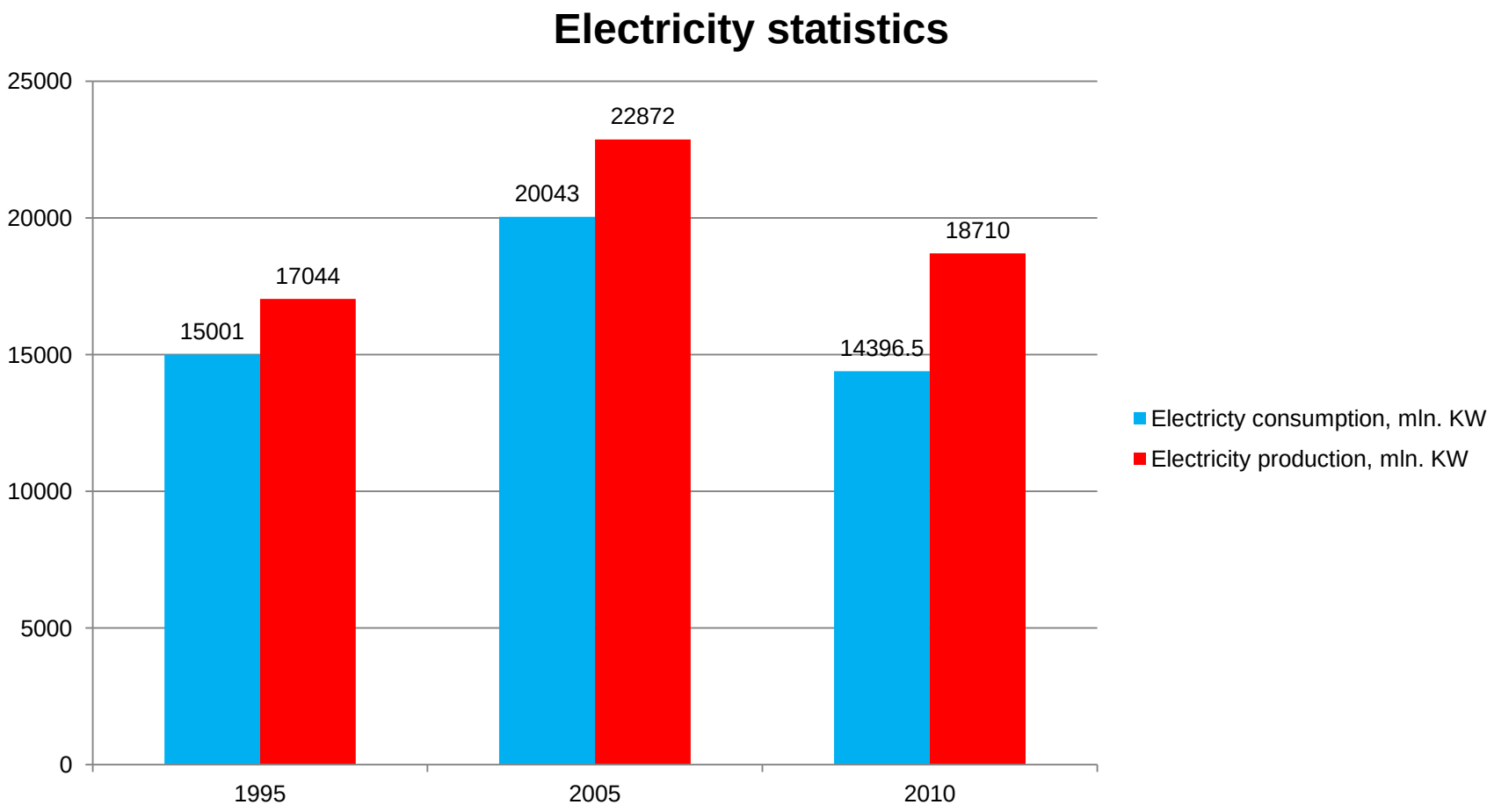
The air pollution trend in Azerbaijan



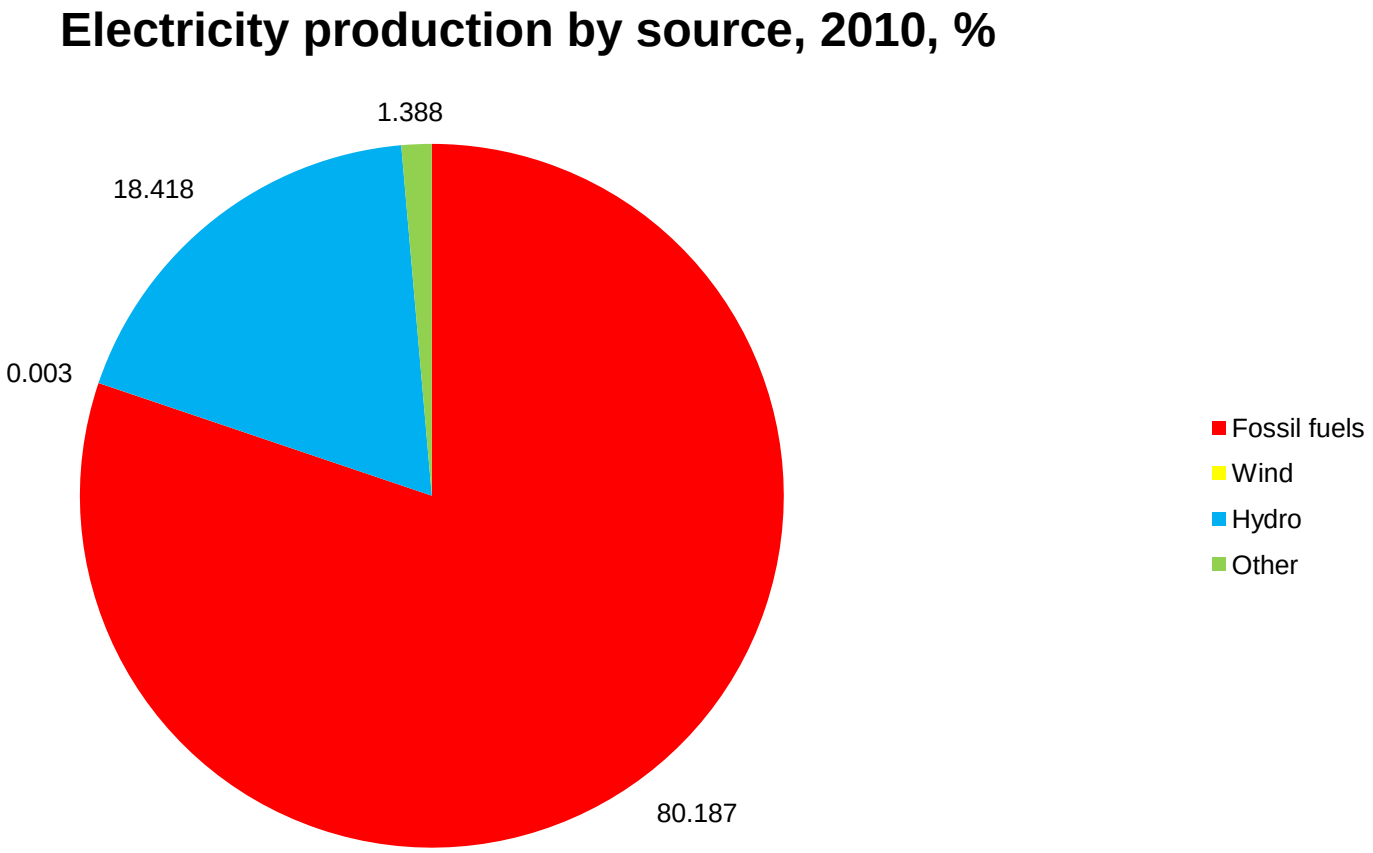
Energy sector of Azerbaijan



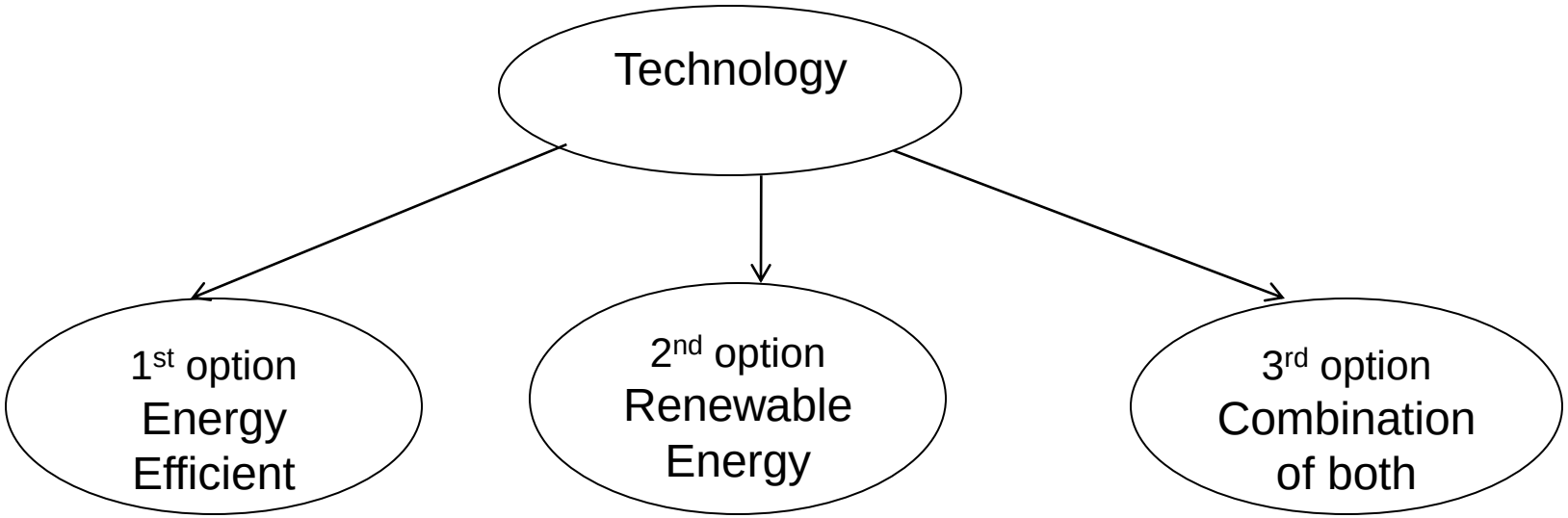
Energy Sector of Azerbaijan cont'd



Energy sector of Azerbaijan cont'd



Clean Energy Model



Clean Energy Model cont'd

- The 1st option reduces air pollution but it does not eliminate it
- The 2nd option eliminates air pollution but it is expensive
- The 3rd option can be a transitional stage between the 1st and 2nd options

Benefits&Costs

- More jobs
- Lower operating costs
- Environmentally friendlier
- Greater innovation
- Cost effective
- Higher initial costs

Azerbaijan towards a clean energy model

- The State Program on Use of Alternative and Renewable Energy Sources, 2005-2013 in 2004
- Switch from oil fuel to natural gas
- The State Agency on Alternative and Renewable Energy Sources in 2009
- Transition to Euro 2 in 2010

Azerbaijan's specific characteristics

- Big natural gas reserves
- Developing non-oil sector
- Relatively small territory
- Expected increase of air pollution (industrial development and vehicles)
- Favorable natural conditions (e.g. solar power: 1500-2000 kWh/m^2 annually; annual average speed is 8 m/sec in the Absheron peninsula)

Potential clean energy model

- Rising efficiency standards for appliances
- Increasing usage of insulation materials
- Adoption of higher ecological standards for vehicles (Euro 3 in 2012)
- Setting energy efficiency targets for industries
- Satisfying the demand increase for energy with renewable sources or setting targets for proportion of the renewable energy in the total energy portfolio

Conclusions

- Climate change will affect Azerbaijan
- Air pollution is currently declining
- Energy consumption is expected to increase and hence air pollution
- Azerbaijan is rich in renewable sources
- For Azerbaijan the 3rd option of the clean energy model is the best
    - Increase energy efficiency
    - Develop renewable sources

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