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APS1012 Management of Innovation – Final Team Projects, Winter 2011**Engineers and Ecology**

The world population is undergoing unprecedented growth; it is expected that it will increase from the current figure of 6.9 billion to 9.5 billion by the end of the 21<sup>st</sup> century. This massive demographic change will put a very significant burden on human infrastructure. Four key areas must be addressed to ensure sustainability of future generations and the environment: Energy, food, water, and urbanization. In order to be successful, worldwide cooperation will be necessary among nations, and between government and industry. At the local scale, people will need to change their attitudes towards conservation of resources such as water and electricity, and new technologies must be implemented to satisfy the needs of society. At the global scale, governments must work together to manage the distribution and sharing of resources. Most importantly, intergovernmental programs need to be implemented to mitigate conflicts.

There will be many barriers towards a sustainable future, including financial, political, and social impediments. There will be a need for incentives, both moral and financial, to encourage change. This report concludes that engineers must play a key role in policymaking, to bring revolutionary change to the human infrastructure. They have the right mindset which is a prerequisite to tackling very complex issues in various industries. Their skills will be needed to deal with multifaceted ecological issues. They will need to be assertive, take on strong leadership roles, and embrace partnership with policy makers.