

Examiners' Report  
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GCE Geography 6GE03 01

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## Introduction

The January 2013 Unit 3 Contested Planet examination used Energy Security as the synoptic Section B topic – a topic which was also used in January 2011. In previous examinations this topic has regularly been the most popular in Section A, usually appearing as Question 1. As with the May/June 2012 examination when Water Conflicts was the synoptic topic, it was interesting to see how candidates approached their choice of two questions in Section A. Question popularity, as a % of all responses in Section A, was approximately:

**Question 1:** Water Conflicts = 26%

**Question 2:** Biodiversity under Threat = 18%

**Question 3:** Superpower Geographies = 28%

**Question 4:** Bridging the Development Gap = 17%

**Question 5:** The Technological Fix? = 11%

Most candidates seem to have chosen their questions carefully, and all questions were attempted in good numbers. The Technological Fix, as in the past, was less popular than the other choices.

The majority of candidates performed well on this examination paper, although there are some general points that are worth mentioning.

- Timing issues are uncommon, but when these do arise it tends to be Section B – and especially Question 6(c) – that suffers.
- Candidates need to divide up their time carefully, based on the mark allocations (especially in Section B where the allocation changes from series to series).
- Some candidates spend proportionally too much time on the 10 mark Section A questions compared to the 15 mark Section A questions.
- Candidates should write the answer to their second Section A question choice in the dedicated answer space.
- Care needs to be taken, in the heat of the exam, not to answer a combination of sub-questions that breaks the rubric of the exam e.g. Question 4(a) followed immediately by Question 5(b).

## Specific comments on Section A

The average quality of response in Section A was good. Most candidates wrote two thorough responses. Question interpretation skills are generally sound although:

- Some responses effectively ignore the Figure in the 10 mark '(a)' part of Section A questions, and go off in their own direction.
- The Figure is a stimulus to further thought and should generate unique ideas, but reference to it must form part of the response.
- The 10 mark '(a)' parts usually do not benefit from the use of major case studies; there is enough to explain in the Figure.
- Assessment and evaluation skills in the 15 mark '(b)' part are often thin; while descriptive use of case studies and examples does gain credit, this is only up to Level 2 in the mark scheme.
- Range is important in all questions. Narrow answers score poorly. In 10 mark data stimulus questions a range of data needs to be referred to e.g. 3 or 4 of the strategies in Figure 2, and ideally all 3 countries shown in Figure 3. In the 15 mark '(b)' parts this is also important. An answer which focused narrowly on 1 global threat and 1 local threat in Question 2(b) would be too narrow.
- Time is still wasted by a number of candidates on excessively long, generalised introductions to issues. This is most obvious in the 10 mark '(a)' parts where candidates would be better served by getting on with the task of answering the question, rather than, for instance, providing a lengthy introductory discussion of the global distribution of water supply.
- Some candidates need to be clearer in their minds about the meaning of the key words: social, political, economic and physical. Interpretation of these words has improved but 'political' still causes problems for some (decision-making, governance, management, international relations, diplomacy).

Many 15 mark '(b)' questions use phrases such as 'assess the severity' or 'assess the extent' or 'assess the relative importance of'. To address these candidates need to:

- Provide a range of examples – it is difficult to meaningfully judge the severity of different threats when only 2 threats have been mentioned.
- Use detailed support i.e. evidence on which to make a judgement.
- Be courageous enough to make a judgement; examiners do not have a pre-conceived notion of what is most important / severe etc – they are willing to be convinced by the quality of a candidate's argument.
- Provide a conclusion which draws together the different threads of the answer and directly answers the question.

## Section A

### Question 1 Water Conflicts

**Question 1(a)** made reference to Figure 1, showing players in the supply of water. Some interpreted Figure 1 as being hierarchical with the most important players at the 'top'. This was not indicated on Figure 1 and, for some, this interpretation was a distraction although some answers used this interpretation to provide an interesting structure for their answers.

Most responses coped well, and there was generally good understanding of the role of each player. Many answers only implied 'safe and secure'; better responses dealt with safe water and secure supply separately. There were confident responses relating to national planners e.g. China's south-north transfer, but some were less clear when discussing a UK context although water planning and drought orders were mentioned. There was occasionally confusion over the role of governments versus water companies. NGOs were considered in detail, with examples of their work often linked directly to the provision of a safe supply. Water companies in the UK or Bolivia were commonly discussed although not always with accuracy. Consumers were often considered in a more generalized way but some good responses broke consumers down into agriculture, industry and domestic and considered each.

This is part of a Level 3 answer to Question 1(a), on the role of water 'players' in providing safe and secure water.

NGO's have an important role, especially in developing countries to supply a safe supply of water so developing countries can have a chance of development. Wateraid is a successful ngo, providing water pumps, toilet facilities and education on how to keep water supply safe and secure with facilities these work very effectively, however some major issues have occurred as with unicef lots of tube wells were implemented but contained naturally occurring arsenic, poisoning whole populations of bangladesh. This is an example of players not ensuring a safe, secure water supply even though the idea was to have the opposite effect.

Consumers have an important role in supply secure supplies, in Germany there are strong policies to reduce water. In Germany only 126 litres per day are used per person, however ~~As for~~ The world ~~and~~ minimum is 150 l of water a day this

gives Germany a more secure supply of water as working together (bottom up strategy) they are increasing supplies and using water ~~in these areas~~ sustainably.



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**Examiner Comments**

This answer makes some reference to 'safe and secure' although it tends to consider them as the same thing. However, it does use examples and recognises that some players can do good as well as be less successful.



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**Examiner Tip**

For Section A data stimulus questions, try to write a balanced answer that considers positive and negatives if you are required to.

**Question 1 (b)** focused on to what extent conflict over water supplies is inevitable. Although rare, there were some answers which interpreted 'conflict' to mean war or similar, rather than a spectrum of disagreement from small-scale local 'spats' to larger regional or international issues. Occasionally phrases such as "*if managed carefully, no lives would be lost*" crept into answers with reference to examples of water conflict which have no history of armed conflict e.g. the Colorado River. A large number of answers, rather disappointingly, argued somewhat naively that conflict was always inevitable. These descriptive answers were usually supported by numerous examples of water conflict, more or less accurately. This type of answer failed to consider the 'assess the extent' command phrase. To access Level 3 or Level 4 marks some assessment of the degree of inevitability was required. Most often this involved reference to attempts at reaching agreement such as the Colorado Compact, Nile River Agreement (often not well understood), and Helsinki Rules etc. Stronger answers argued that conflict was much more likely when water resources were trans-boundary and / or when there were wider political disputes between players – for instance in the near east or between India and Bangladesh. Some peered into the future to argue that global warming and rising demand would make conflict more likely in the future compared to today. From many candidates there was a tendency to 'roll out' case studies without really considering how much they contributed to answering the actual question, such that there was far too much of 'everything there is to know' about the Aral Sea or Three Gorges Dam. Overall, answers to this question were a little disappointing.

This is part of a response to Question 1(b), which gained Level 2 marks. It is the middle section of the answer; the question asked candidates to assess whether conflict over water supplies is inevitable.

The River Jordan provides water and because Israel feels that the Palestinians should be kicked out, there are fears of ~~weapons~~ nuclear weapons being sent off. This is why the US military has surrounded these areas. This conflict is inevitable as water is essential for there economic growth.

The Aral Sea has dried out partially and the government are providing money to restore the Northern half. There are disputes because of the government want to reestablish the fishing industry, and the destroyed habitat there. The reason why it dried up and why conflicts with this plan, are because the water was used for irrigation of the cash crop cotton.

People like Greenpeace believe that you can sort this problem out by using water more efficiently, 15% of water is lost through waterpipes. Conflict can be stopped if solutions like these are put in place. Desalination can also be an answer to this. Another solution is to store rainwater e.g. in the UK, <sup>some</sup> water is not collect through reservoirs, but goes through the gutter.



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**Examiner Comments**

This answer is descriptive and written as a series of separate sections, with little relationship to each other (River Jordan, Aral Sea, Greenpeace). Much of it is not focused on water supply, however there are hints at solutions (desalination, rainwater storage), but overall the examiner has to do much of the work to join up the ideas.



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**Examiner Tip**

When writing your answer, keep looking back to the question to make sure you are still on task.

## Question 2 Biodiversity under Threat

**Question 2(a)** made reference to a spectrum of strategies to manage biodiversity, Figure 2. This question proved slightly troublesome to many candidates. The question asked why a spectrum of strategies is used. Many candidates instead explained, often in great detail and supported by examples, how each strategy conserved biodiversity. Often they were well-written and cogent – but nevertheless answers to a different question. Another approach was to evaluate the success of the 4 strategies, again, this was not the question set. Answers should have focused on 3 main explanations, namely:

- the degree of threat facing a species or ecosystem – ex-situ conservation is used when species are endangered and / or have lost their natural habitat, for instance
- the needs of humans versus the need for conservation – which is why sustainable management is used, to try and achieve a balance
- economic issues i.e. the funding available.

Quite often, economic issues between the developed and developing world were explained and in many cases the valid point about degree of threat was arrived at in a roundabout way, when explaining how restoration and ex-situ conservation worked. There were too many examples of able candidates answering the wrong question and not identifying the reasons / factors that influence choice of management strategy. In some cases responses were rather simplistic along the lines of “*there are lots of ecosystems so there needs to be lots of management strategies*”. Although rare, some answers argued that plant species versus animal species need to be conserved in different ways, and that some ecosystems can cope with a higher degree of human use than others.

This extract is the start of a Level 2 answer to Question 2(a), about why a spectrum of strategies is needed to manage biodiversity.

(a) World biodiversity is under current threat and according to predictions it is likely to decrease at a faster rate as the world keeps developing. Various strategies are being used to help preserve ecosystems and the species that proliferate in them.

In figure 2 we are shown a wide spectrum of different conservation techniques which are under current use. The main reason for this diversity of techniques used is mainly related to the level of development

within a country. For instance a strategy of "Sustainable management with use of ecosystem resources" shown in this figure would be of better use in countries which are less developed as it interacts directly with the population and can be considered a bottom up approach. On the other hand the strategy of "Protected areas with managed access, eg. National Parks" would be more suitable for countries with greater monetary access due to the need for protection (fencing and park rangers) which tend to have a high cost.



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**Examiner Comments**

This answer begins with some general background on biodiversity, and a statement of what Figure 2 shows – none of this is needed. However, the answer then moves into an explanation of how level of economic development influences strategy choice, which is much more focused on the question.



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**Examiner Tip**

Try to avoid long introductions which provide background, but do not answer the question as these do not gain direct credit.

**Question 2(b)** had parallels with Question 1(b) in some ways. Most candidates were able to identify a range of threats (like a range of water conflicts), and illustrate these with reference to examples and case studies. Far fewer were able to assess the severity of the threats i.e. compare the degree of threat and move towards a judgement of how severe the threats are. Many answers took the 'and another threat is' approach, descriptively listing often a wide range of threats in quite a detailed way. Some struggled to decide whether the threats were local or global and there were phrases such as "the global threat of oil exploitation in the ANWR". Confusion over global and local was a common theme. That said, many answers identified a range of local threats. Alien species issues were often outlined in a detailed way, as was tourism. Many identified climate change / global warming as a significant threat to coral reefs and / or forests and there was good detail on the GBR and other locations in terms of bleaching, ocean acidification, sea level rise etc. This question cried out for a summative paragraph that compared global and local threats and 'assessed their severity' – sadly this was lacking from many answers. There were some very good responses that tackled the question head on arguing, for instance that the local threats are actually more devastating today and have direct consequences for people who depend on ecosystems, whereas global threats are less of an issue today, but may increase in importance in the future. Candidates need to be encouraged to be confident and state their view, based on the evidence they present.

This extract is the final part and conclusion of an answer to Question 2(b), about global and local threats to biodiversity. It gained Level 4 marks.

As the world is becoming more advanced, technology is becoming increasingly important. But an equally important factor such as pollution, decreases and increased hunting and also processes such as agriculture which has become more modernised. Species cannot always adapt to new technologies and this can threaten their existence. For example, France has invested in more efficient irrigation by which fertilisers are added. This can upset the ecological balance of ecosystems and cause species to die out or migrate.

One of the most important factors is the use of ecosystems for recreation such as moor or dunes. This significantly decreases the carrying capacity and means a greater proportion of the population fail to survive.

Overall, I think both global and local threats affect biodiversity but

the most severe are the local threats such as pollution, decline of the environment and changes in the way ecosystems operate due to external input. These factors can be prevented more easily and if these did not occur, then the global threats would not

best site, for example if an area would need to be used for recreation, there would be no need to deforest the area on a large scale. ~~to local threat~~ Local threats are the most severe in affecting biodiversity as they amplify the effects of global threats.



### ResultsPlus Examiner Comments

This answer uses evaluative language such as 'one of the most important factors' and uses good terminology such as 'carrying capacity'. The conclusion links global and local factors together, arguing that local threats make global problems worse. The candidate sustains the idea that local threats are the most severe.



### ResultsPlus Examiner Tip

Range is an important aspect of any answer. In this question considering 1 local and 1 global threat would not be enough to draw a convincing conclusion as to which was the most severe.

### Question 3 Superpower Geographies

**Question 3(a)** was popular, and many candidates seem to enjoy writing about geopolitics and global superpowers. Figure 3 showed 3 population projections and the data provided was understood well by most. However, in a similar way to Question 2(a), this question was prone to misinterpretation. The question was not 'explain the population projections shown'. Those who read the question in this way often went down the demographic transition model route and explained how the projections had been arrived at, rather than the consequences for superpower status. This question suffered a little from over-long introductions, setting out in great detail what a superpower is and how this can be measured. In addition, a minority ignored Figure 3 and launched into a general discussion of the status of the three countries. Most responses did deal with consequences and these were in general understood well. Weaker answers tended to lump India and the USA together (as both populations increase on Figure 3). Better answers discussed each country in turn. Some very good arguments were developed for India, which argued on the one hand that a rising working age population would be good news economically, but on the other might be negative in terms of resources, environment and social conditions. Stronger answers argued that for Russia, the decline in population might have less significance than might be expected given that its status lies in military and natural resource power. What many answers, which showed good understanding, lacked was the final link to superpower status – in other words they had a range of consequences but these were not linked to geopolitical status. As in the past, there were many good quality answers. Candidates do need to have it reinforced that words such as impacts, consequences, effects etc are not 'negative' words – consequences can be positive or negative.

This is part of a Level 2 answer to Question 3(a) on how India, Russia and the USA could be affected by future changes to their populations.

As figure 3 shows India's population is expected to increase to over 1200 million. As a an emerging superpower this will likely have significant consequences. The overall large population ~~with~~ along with a large working age demographic means that India will be able to produce many goods which can be used to be self sufficient or to export therefore giving them a higher GDP which can be invested into services. This high population also will affect other superpowers such as USA as ~~the~~ Transnational corporations (TNCs) will outsource jobs ~~to~~ to India for cheap labour which could decrease employment

in the USA itself while also enabling TNCs to gain more profit.

However another impact of the large population in India is ~~the~~ that there will be a higher demand ~~on~~ and pressure on services such as education and healthcare which might not be able to cope especially as there is also a higher percentage of the older population as figure 3 shows which will increase demand even further.



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**Examiner Comments**

This candidate recognises that India's population projection has both positive consequences and negative consequences, which is good. However, the answer discussed India in detail, mentioned Russia very briefly, but did not mention the USA at all, which restricted the mark.



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**Examiner Tip**

Faced with a Figure with 3 or 4 parts to it like Figure 1, 2, 3 and 4 (countries, players, situations) make sure you refer to all of them in a balanced way.

**Question 3(b)** yielded a large number of good answers demonstrating sound understanding of the criteria for superpower status and considering in detail the extent to which China is meeting these, or is likely to do so in the future. Many did discuss both countries although some became focused on only China. Weaker answers were those that listed China's strengths and left it at that. There was good knowledge of recent changes and much up to date knowledge of the global financial crisis and how this has affected both countries. China's role in Africa was often mentioned, sometimes in a rather cursory way, but nevertheless showing good understanding of recent trends. Overall, assessment in this question was stronger than in the other parallel questions. Candidates seemed more willing to directly compare the USA and China and there was greater confidence in terms of committing to a judgement. Many answers were well structured, logically considering hard v soft power, or economic, military and cultural influence. Some good conclusions were seen, such as those that argued China is less of a threat than many think – possibly raising human rights issues, demands for democracy and an economy too dependent on exports fuelled by increasingly costly raw material imports. It was very pleasing to see so many candidates with a good awareness of the economic and geopolitical trends which are shaping their own futures.

This extract is the introductory part of an answer to Question 3(b), concerning the threat China poses to the USA. It gained Level 4 marks.

(b)

China — ~~Plan~~ — ~~econ power (1) - 8%~~ — ~~pulling in future (2)~~ — ~~largest consumer~~ — ~~1.3 bil Pop (3)~~

USA — ~~largest military spend (2)~~ — ~~Biggest econ (1)~~ — ~~300 mil pop (3)~~

China is part of the BRICs, this is since the within ~~20-30~~<sup>40-50</sup> years china is expected to be a superpower in its own right. China boasts a large population and a rapidly growing economy. In the long term there is a likelihood that China will become a threat to USA's status as the only Superpower.

China could become a superpower in its own right due to the large amounts of economic growth that China has had. China has the largest longest sustained economic growth in history and the increase in demand recently has meant that China's economic growth does not seem to be slowing down. Currently at about 8% annually, China could become an economic superpower and hence threaten USA's status as the only superpower.

However, although China has experienced rapid economic growth, it remains to be seen how long it is to be sustained. China's GDP is still far lower than the USA and is likely to catch up within 10 to 20 years. With USA still being the largest economy in the world (excluding EU) with 25% of global GDP, it will take some time for China to threaten USA as an economic super power.



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**Examiner Comments**

Notice that this candidate completes a very brief plan, which considers both the USA and China – crucial to answering the question thoroughly. There follows a section on the economic strengths and weaknesses of China, and the whole answer was written in an evaluative style.



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**Examiner Tip**

Briefly planning answers allows time to think about the question and decide how best to organise and structure the answer, which often pays off.

## Question 4 Bridging the Development Gap

**Question 4(a)** was often well done, and was frequently chosen by candidates who were confident with the players and their roles. Of the three shown in Figure 3, some responses missed out National Organizations in their answers, or seemed unclear on the role of an organization such as DFID. In some cases NGOs were considered in a rather uncritical way, so only the positive side of the story was provided. In terms of IGOs such as the World Bank and IMF, some of the supporting evidence used was rather out of date, for instance Structural Adjustment Programmes were superseded by the HIPC initiative some time ago (nevertheless, the general line of argument in relation to SAPs was usually cogent). Weaker answers tended to be on the whole rather one-sided i.e. NGOs are positive, IGOs are negative. In terms of NGOs detailed supporting examples of their positive impacts was often given, although weaker answers reverted to the 'water pumps in Africa' type of response which lacked any detailed support and tended to be over-generalised and sometimes stereotypical. Overall, this question was answered to a good standard by many and the positive and negative aspects were covered more often than not.

This example is most of an answer to Question 4(a), bar a brief introduction. It achieved a mid Level 2 mark.

Large International Government Organisations such as the World Bank, tend to fund large scale projects to try and aid poor countries to develop and to close the development gap. However they can sometimes worsen the issue and cause greater debt. These projects do tend to help countries to develop. An example of one large scale project that was set in place in Botswana to help to develop the country was diamond mining. It helped move many people from agricultural farming to a trade which had more prospects. This is an example of a top down strategy. A top down strategy is when there are a lot of funds and decisions are made by people 'high up' so they reap very little reward or benefit to those who are in the greatest need. Whereas, NGOs, <sup>non-governmental organisations such as Oxfam</sup> are a bottom up strategy. This form of

strategy is the most beneficial however as it assess the needs of the poorest and is more likely to help prevent the people falling back into poverty. However, this strategy tends to lack the funds of the governments therefore tends to be more unreliable. ~~the~~ Meaning little effect is taken on the development gap

National agencies are somewhat of the middle ground. They are able to assess the needs of what needs to be done greater than a government which means that locals are more likely to be helped and the development gap closed. They also have more funding to do so, meaning they are more reliable and effective.



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**Examiner Comments**

The answer uses some good terminology, and mentions all 3 players, but it is thin. The examples used are vague such as 'a large scale project that was set in place in Botswana'. No examples are provided for NGOs or National Agencies, although positive and negative impacts are discussed. This answer has the correct structure but needs more detail.



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**Examiner Tip**

Getting the structure of an answer right is important, but once this has been done evidence / examples need to be used to give the explanation depth and make it realistic.

**Question 4(b)** differentiated well. Many candidates had good knowledge of a variety of models and showed some understanding of these. Rostow and Wallerstein, as well as the Brandt Line and Dependency theory were often used. Many answers were rather descriptive, stating what the models were, how they worked and what they showed but failing to link this to understanding the development gap. Some models were less well understood and there was some confusion and 'mixing' of different theories. Dependency was generally understood well, and perhaps most often linked to an understanding of the development gap i.e. that dependency theory could help explain why some countries remain in a state of underdevelopment / in the global south. Many candidates were able to identify weaknesses in the models, most often that they failed to account for the rise of the BRICs or Asian Tigers. Some argued, convincingly, that none of the models or theories are very useful today as all tend to date from an earlier time.

Some struggled to assess usefulness, but there were some excellent answers to this question with strong insight into how far different models worked. Occasionally candidates rather ran out of steam and, failing to identify another model or theory to discuss, instead moved into how development is measured and considered indicators such as HDI, the MDG or the Digital Access Index which failed to address the question.

This is the beginning of an answer to Question 4(b), on how models and theories can help understand the development gap. It achieved a mid Level 3 mark.

The development gap is the difference in income and quality of life between the richest and the poorest countries in the world.

The North-South divide suggests that countries in the South are not as developed as countries in the North. This is true to a certain extent, as ~~countries~~ <sup>places</sup> like ~~Africa~~ ~~are~~ North Africa are not developed. However countries like Brazil and South Africa are developing. South Africa has resources of diamond and gold, and also has ports, allowing them to trade between countries. This creates an overseas income, which can be invested in health care and education. Brazil also has ~~resources~~ natural resources - the Amazon Rainforest, along with good trading routes. It has allowed Brazil to develop significantly as wood is a renewable source ~~but~~ <sup>and</sup> provides immediate energy.

This links to the World Systems theory, which suggests that there is a core, a periphery and a semi periphery. Brazil have moved from the Penphery to the semi periphery, similarly to the other BRICs - China, India and Russia as they have developed over time. The way they have developed relates to Rostow's Model, which states that a country has to go through 5 stages of development.



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### Examiner Comments

The answer begins with a brief definition of the development gap, which is useful in providing a focus. A discussion of the North-South divide model follows; this is evaluative as it argues that some countries in the south have developed, undermining the model. Although rather brief, the next section links the first model to World Systems theory and then Rostow – this is useful as it shows that the models need not be viewed in isolation.



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### Examiner Tip

Linking ideas and themes, by linking paragraphs, is a good way to provide a coherent argument. The alternative is to provide separate 'chunks' of information which focus on totally separate ideas or case studies – which makes coming to a conclusion difficult.

## **Question 5 The Technological Fix?**

**Question 5(a)** Figure 5 showed different methods of 'cooling the planet'. Overall, this seemed to be familiar territory to many with all methods being relatively well understood. However, many candidates' answers might best be described as '*playing with the scores*'. Very little was added beyond the Figure, with answers simply stating that one option was better than another, or worse than something else. These were descriptive answers with very little explanation of the scores. On the other hand, a number of responses did move on and explained why the costs of space mirrors were so high, or why afforestation would be relatively low cost. There was relatively good understanding of the possible consequences of sulphate aerosols in terms of acid rain and many argued that afforestation would suffer from timescale problems although it was the most natural method and would meet least public resistance. Some candidates had their own knowledge of ocean fertilisation experiments or could suggest actual financial costs. The issue remains, however, that a large number of candidates did not attempt to explain the different scores; they simply described and compared them.

This is part of a Level 1 answer to Question 5(a), which focuses on different methods of geoengineering.

a). Space mirrors is a good way of ~~est~~ cooling the planet and they would be very effective and have a low risk of producing negative side effects. However, as figure 5 shows, it would be very expensive to build the mirrors and launch them into space.

Carbon capture is also expensive, but is cheaper than space mirrors. But it is not as effective as the mirrors because large amounts of CO<sub>2</sub> would have to be captured. It has low risk of side effects, but would be unappealing to look.

Sulphate aerosols is cheap and as gas is being released into the atmosphere, and unlike the mirrors, large and expensive ~~see~~ rockets rockets won't be needed to release them, they can be released from planes or balloons. This method would be very effective at cooling the Earth.



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**Examiner Comments**

This is a very descriptive answer. It basically describes the scores provided on Figure 5 but does not attempt to explain them in a meaningful way. There are basic statements such as 'unappealing to look at' but these are not clear explanations. The lower cost of sulphate aerosols is partly explained, but in a very limited way.



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**Examiner Tip**

Attention must be paid to command words. In 10 mark data stimulus questions the command is never 'describe' and there are few marks for description.

**Question 5(b)** suffered, as in the past, from a general lack of reference to specific technologies. There are many that could have been included such as GM crops, the internet and associated cabling e.g. the EASSy cable, drugs for treating AIDS/ HIV etc. Candidates need to be encouraged to be specific about the technologies they use to support their answers. While many candidates could discuss 2 of the factors, a convincing discussion of all 3 was rarer. 'Social' was often less well understood and in many cases rather 'fudged'.

Nevertheless there were sound answers relating to economic factors, such as the obvious MEDC v LEDC divide in terms of access explained by lack of finance for R&D, patents increasing the costs of technology such as GM crops and pharmaceuticals. Political factors were generally understood fairly well and examples such as internet and mobile access in North Korea and China were used (China was sometimes seen as almost the same as North Korea, which is not the case). In terms of social factors, religious groups like the Amish were often mentioned although frequently in a rather sweeping way and implying that this group is much more numerous than it actually is. Although less common, leapfrogging was sometimes used to argue that economic barriers can in some cases be overcome and there was good knowledge of schemes to make technology more accessible e.g. OLPC. Overall this question required very careful selection of examples to illustrate arguments and some candidates found this a real challenge. Assessment was relatively rare, although many came to the basic conclusion that economic factors are the most important.

This is the beginning of an answer to Question 5(b), which asked candidates to consider the importance of political, economic and social factors in terms of access to technology. It achieved a Level 4 mark.

5b) many players + factors are involved in the unequal access to technology.

The communications technology index describes one countries willingness to assist other countries technological development. Countries with a high index are those which are relatively willing to assist development. E.g. France. the willingness may be in the form of refusal to grant patents or withholding bilateral aid as a form of investment. This is a political factor. Other political factors could include corruption of leaders → whereby wealth is inherently distributed unequally, or aid is not delivered appropriately. E.g. governments are responsible for distribution in the OLPC XO-3 project. Leaders <sup>of communist</sup> ~~may also~~ countries, like Korea may refuse certain types of technology, e.g. internet in fear of the population becoming polluted with

foreign aspects of the political structure via the media & internet.



**ResultsPlus**  
**Examiner Comments**

This response begins to answer the question straightaway, focusing on political factors. There is some detailed support, such as OLPC, Korea and the CTI index. More than one political issue is considered, which begins to give the answer depth.



**ResultsPlus**  
**Examiner Tip**

Many very good answers use smaller examples, rather than major case studies. This approach provides range, and depth can be provided by adding some detail to some examples. Having a range of examples makes evaluation and assessment easier to accomplish.

## Section B

### Specific comments on Section B Issues Analysis

The Issues Analysis was set in Europe and focused on the Energy Security topic. Overall, there was good understanding of the issues surrounding nuclear power and other energy sources. Many examiners remarked that:

- Synoptic material was seen less than would have been expected; many candidates seemed content to rely on the resources provided.
- Many candidates gave rather too much weight to nuclear accidents in their answers, which are the exception rather than the norm.
- The key word 'players' was often not fully understood, surprisingly.
- In many cases direct reference was not made to the resources, which is one of the skills being assessed i.e. selective and accurate use of evidence.
- Overall, candidates seemed well prepared but less willing to engage in research and find links to wider issues.
- Simply stating 'link to Unit 1, climate change' or 'synoptic link to biodiversity' does not constitute synopticity as it provides no explanation.

## **Question 6**

**Question 6(a)** While there were many good responses to this question, some were limited by lacking a full appreciation of 'players'. In many answers the players discussed were actually countries (and not even the government of a country, just 'France' or 'Italy'). This interpretation narrowed the range of material in the booklet which was used, as well as narrowing the scope of the answer. Some answers were rather pedestrian and two-dimensional i.e. some countries are in favour of, and others are against, nuclear power.

A number of responses spent a long time explaining what nuclear power is, and how nuclear disasters have occurred in the past – rather than getting down to the business of answering the question. In addition the question was focused on explaining, i.e. giving reasons why different views of nuclear power are held. Stating or describing views fails to provide this explanation.

A number of answers were structured by the factors that influence views / perceptions (cost, reliability, environmental issues). This structure worked well, although in some answers of this type the players tended to get lost in the detail. Some answers stated the main 'fears' surrounding nuclear power but did not link these to specific players, or simply referred to 'players' or 'the main players' without actually stating who the players were.

Nevertheless there were many good answers, which dealt with governments, unions, local people and the various TNCs involved in the nuclear industry. Sometimes reasons for the perceptions were a little simplistic such as arguing that all TNCs like nuclear because it brings profits. The views of environmental organisations were dealt with, sometimes, in a more sophisticated way with candidates arguing the environmental organisations were 'torn' over nuclear due to its lack of CO<sub>2</sub> emissions versus issues such as waste.

The range of explanations tended to be limited to what was in the booklet, and it would have been good to see some reference to the political power of the general public in democratic countries. Better answers did make some reference to the green agenda and carbon targets, and the role nuclear might play (hence being supported by some players).

This is part of a low Level 2 answer to Question 6(a).

(a) There are many reasons why energy players have such different perceptions of nuclear power.

For example, a company who supplies the parts needed to build a nuclear power station would be much more pro nuclear power than for example, environmentalist groups such as Greenpeace because they have different interests, for example, ~~the~~ the aim of the company supplying parts of a nuclear power station would be to make money and so, will encourage the use of it.

~~For~~ The aim of environmentalist groups however is to protect the environment. This means they are more likely to be concerned about the radioactive waste or safety issues + so, are more likely to discourage the <sup>development</sup> growth of nuclear power.



**ResultsPlus**  
Examiner Comments

This answer does not refer to specific players, but rather mentions 'a company' and 'environmentalists'. What is said is largely correct but there is no reference to the resources in the booklet and the answer lacks detail.



**ResultsPlus**  
Examiner Tip

Players are one of the 3 synoptic themes (players, actions, futures) and are implicit in all Section B issues analysis resources.

This is an extract from another response to Question 6(a). This response gained Level 3 marks.

(6a) Energy players are those who are part of the production or consumption/use of energy. Players which have perceptions on nuclear power include, the public, governments, TNCs, environmentalists and producers of nuclear power.

TNCs involved in the production of ~~France~~ Nuclear energy have a positive perception of Nuclear power. They want to make money and therefore support their business. TNCs such as EDF energy who own and run the only UK operating reactors need to increase their diversity of energy production from different sources of raw energy. Therefore their perception of nuclear

power is a positive one due to the ability for nuclear power to produce large volumes of energy, which is what investing countries in Western Europe need due to their high levels of energy consumption.

Public perception of nuclear power differs. France has a high level of public agreement on the benefit of nuclear power. Figure 3 compares the opinion of western European countries on nuclear power. France has the highest production of electricity from nuclear power at 74%, with 70% of the public agreeing that it helps make them less dependent on

imports. This high generation of electricity from nuclear sources for an extended period of time may have strengthened positive opinion of nuclear power.



**ResultsPlus**

**Examiner Comments**

This extract begins with a brief definition of players, and then proceeds to name specific players (EDF, the French public). The explanations are clear and evidence is used from the booklet (74%, 70%).



**ResultsPlus**

**Examiner Tip**

Always select evidence from the booklet and use it in the answer. This could be data or quotes or direct reference to a Figure or one of the Views.

**Question 6(b)** This question was generally answered quite well.

Most answers coped with identifying economic and political costs and benefits, and linked these to energy security. Data from the booklet e.g. costs of building and cost of electricity, was often used as evidence. Political issues were perhaps more challenging than economic, but there was often reference to the political power of Russia / Gazprom and the importance of having good international relations with energy suppliers.

The best answers did make the link to sources of uranium being in countries which are allies, but some also suggested that as a finite resource at some later date this may not be the case, hence compromising long-term security. Less well explained were issues of decommissioning and waste disposal. In general evaluation tended to be implied. The best answers did this as a summary or conclusion, indicating what, in their view, was the balance between economic and political costs and benefits. Weaker answers tended to focus more on economic than political and perhaps more on costs. Essentially this was a question in 4 parts (costs / benefits / political / economic) and a sustained answer was needed to cover all aspects. One of the main benefits of nuclear would be that it would provide continual baseload supply (in the way coal and gas do in the UK today), but this benefit was rarely alluded to. Linked to this was a common lack of grasp that nuclear only provides electrical power and as such might not be as flexible as a source like natural gas. The political benefit of nuclear helping meet Kyoto / Copenhagen targets was seen less often than might have been expected. As with Question 6(c), an overview evaluation was important in terms of achieving Level 3 and Level 4 marks.

This is a part of a Level 3 answer to Question 6(b).

b) Economic benefits will be seen in a number of countries especially countries which have a small energy mix or are very dependent on imports. For example Greece has extremely small finite reserves and therefore relies heavily on imports from countries such as Russia ~~for~~ these imports come at a premium costing much more than if they had their own reserves. So nuclear power would reduce import costs saving the country money. This is why France and the UK have both invested heavily in nuclear power with 12 planned reactors between them. This also links to the political issue of disputes with the most famous being the Russia and Ukraine gas disputes which led to supplies to the UK and other parts of Western Europe being ~~cut off~~. So nuclear power would decrease the chance of occurrences like this improving energy security dramatically. ~~It~~

The most obvious economic costs are the actual set up costs of the factories or reactors as they cost ~~are~~ much also the taxes that build them are concerned about the very high decommissioning costs and are asking for grants of the government due to the extremely high prices.



## ResultsPlus

### Examiner Comments

This response clearly focuses on economic benefits and costs, and the language is partly evaluative. There is some reference to wider links e.g. Russia and Ukraine, although little in the way of hard evidence from the booklet is used. This has the effect of slightly reducing the overall mark.



## ResultsPlus

### Examiner Tip

Make sure that a sound discussion is always backed up by hard evidence; there is much to be used from the resource booklet.

**Question 6(c)** There were many interesting answers to this question. Most candidates covered all 3 options in some detail.

The most successful responses were those where candidates had clearly researched the 3 options and so had a deeper understanding of what was involved e.g. where the energy resource had already been successfully used. There were good overall assessments comparing the three options and also sometimes other alternatives. The best responses had some form of final evaluation at the end of their answers and candidates need to be encouraged to structure their answer this way. There were some issues however:

- CSP was sometimes confused with solar photovoltaic and some did not consider the context illustrated in Figure 11 and so discussed CSP's applicability to countries like the UK and Germany
- bioethanol was sometimes poorly understood, and not recognised as largely a transport only fuel
- earthquakes caused by shale gas drilling near Blackpool were blamed for collapsing houses and even tsunamis.

On the other hand there was some interesting synopticity such as:

- the unfolding situation in North Africa and the Arab Spring, in relation to CSP and how secure the Desertec scheme would be in reality
- the UK government's recent decision on shale gas and details of the test drilling
- mention of other options, such as the Severn Estuary tidal barrage
- the development of shale gas in the USA
- the development of biofuels in Brazil.

In general environmental issues were considered more fully than energy security issues by many candidates. A large number of responses favoured shale gas, arguing that being domestic and reliable outweighed the issues of CO<sub>2</sub> emissions and local environmental impacts. This type of argument was what was required to produce a genuine assessment i.e. weighing up all of the options and coming to a clear conclusion. The other option was to state, rather simplistically, that all were equally good and all 3 should be used. Overall, synopticity was most in evidence in this question and answers tended to be more realistic and grounded in fact, compared to 6(a) and 6(b).

This is the concluding part of a Level 4 answer to Question 6(c).

Concentrated solar power is a renewable source and releases no CO<sub>2</sub> in its operation. However, the construction, maintenance and transporting of the energy is expensive and can release greenhouse gases in its processes, meaning it is not a green fuel. It does however ~~can~~ increase the security of w. Europe's energy supply as it is unlimited. ~~and~~ Similar to this, Abu Dhabi constructed the world's largest solar panel in 2013 and used solar energy to provide a domestic dose of energy, freeing all its oil reserves and allowing it to export. As oil is being depended on elsewhere, w. Europe could use CSP and reserve its oil for elsewhere. This would increase security and ensure w. Europe always has a plentiful supply of energy.

Bioethanol is a renewable resource and is a socialist and grassroots model approach to security supply. As it requires low skills and infrastructure, it is a sustainable way to secure supply as it is compatible with the financial and geographical context. It is also carbon neutral as as the EU proposes to reach 0 emissions by 2050, it is moving towards a global CO<sub>2</sub> neutral planet. Bioethanol can also be produced domestically and so this reduces reliance on states such as Russia and also OPEC. This means that the unpredictable ~~offer~~ access of raw global plants will not threaten Europe's energy security as they have their own dependable source. Bioethanol is not only a top down strategy as it includes TNCs such as Genus, but also a bottom up as it integrates individuals and

farmers as shown in fig 11. 1.2mm tonnes of what needed per year for the factory is feasible provides many opportunities for agricultural businesses and individuals and as it includes all plants over a wide range, it makes it a more secure option to ~~ensure~~ security w. Europe's energy. It does however require large areas of arable land to grow the crops and require irrigation and technological machines to harvest, and so can put pressure on the environment and its resources. It is also climate sensitive and this was seen in Brazil where a recent hard winter ~~was~~ meant the

production of bioethanol was hindered and they had to rely on imports of oil by the three petrobas.

The three options for security energy and protecting the environment of Europe have advantages and disadvantages but I think that Bioethanol is the most sustainable and worthwhile approach as it is CO<sub>2</sub> neutral, can be produced domestically and involves integration between all parts in the Europe. It could be used in conjunction with the EU ETS to save supply further.



**ResultsPlus**

**Examiner Comments**

Both benefits and costs for CSP are outlined, with an evaluation that the costs outweigh the benefits. There follows a clearly argued conclusion which judges that bioethanol is the best option at the moment.



**ResultsPlus**

**Examiner Tip**

Do not be afraid to come to a controversial conclusion, as long as you support it with evidence.

## Paper Summary

Overall, the quality of response to this examination paper was good and there were some outstanding answers seen. The vast majority of candidates cope well with this examination paper and timing issues and very weak responses are rare. When performance does fall below expectations it tends to be for reasons which have been referred to in previous reports – lack of assessment / evaluation and lack of synopticity. Candidates cannot expect to move into Level 3 or Level 4 of the mark schemes unless they address these key issues and produce work which demonstrates higher order thinking.

Based on this examination, candidates need to:

- Be careful not to assume that the information in the Section B resource booklet is 'detailed enough' and so make no attempt to try and go beyond it. The most cursory reading of the Section B mark schemes shows that going beyond the information provided is a requirement of a Level 3 or Level 4 response.
- Similarly, describing and explaining case studies is not enough to access the upper levels of the mark scheme. Adding more and more detail to more and more case studies will never be enough to bridge the gap between the top of Level 2 and Level 3. Some assessment / evaluation is always required to achieve this.

## **Grade Boundaries**

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