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Introduction

After the return to pre-Covid levels in 2024 this year's candidature performed slightly better. Some candidates, albeit a small percentage of the entry, were very well informed about the potential impacts of the trade war being conducted by the US administration and added a number of geo-political comments to their answers to Q3d, Q3e and Q4. These were not essential but political awareness is a great help on this paper given that it is entitled 'Making Geographical Decisions'. On the other hand, it remains disappointing that background geographical AO1 is so weak given that is a critical element in understanding questions. This is a general issue across the whole specification and, of course, AO1 isn't rewarded directly in the higher tariff questions on this paper or any other. The issue is more one of candidates not being able to unlock the meaning of questions that draw on the specification's abundant geographical terminology. Some candidates produce answers that clearly indicate that they don't understand the geographical terms used in the question, which will always be drawn from the specification. Others may leave these questions unanswered for the same reason. Putting together a lexicon and frequent testing of these definitions would help. The other lessons to be learned from this paper remain the same. This paper rewards not only those who know the key terms, especially those found in Topics 7,8 and 9, but also have an awareness of the difference between an argument and assertion. In the former, evidence is deployed to support a point whereas assertion of a view is a simple statement of a position without any supportive evidence. The latter is generally fine for the lower tariff 'explain' questions but is not sufficient for the higher tariff questions which carry exactly half the marks available. In other words, assessment and evaluation demand a different approach as does the command to 'Justify your choice…' used for Q4.

Question 1(a)ii

The specification identifies 'altitude, rock and soil type and drainage' as local factors. Climate, or more specifically temperature, precipitation and sunshine hours are offered as the key elements explaining the global distribution of biomes. Many, but not all candidates, had some recall of the 'local' factors identified as such in the specification and altitude was probably the most common response. However, candidates are not being tested on the accuracy of their recall of where in the specification these terms arise but their knowledge and understanding of geography in more general terms. In that context it is obvious that two of the three global factors also operate at a local scale so the list of 'local' factors was expanded, as shown here with the second exemplar although, as the first exemplar shows it is not the case that 'anything goes'.

(ii) State **two** local factors that can affect the distribution of biomes.

1 Borders [redacted] Alaska

2 Borders the Arctic ocean

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Examiner Comments

It is not clear why this candidate thinks this to be relevant.

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Examiner Tip

Read questions carefully.

(ii) State **two** local factors that can affect the distribution of biomes.

(2)

1 Rainfall

2 Temperature - ~~some~~ plants will only grow in certain ranges.

ResultsPlus
Examiner Comments

These climatic variations were, with very little debate, regarded as acceptable answers because they do, of course, vary at a local as well as the global scale as they appear in the specification. It is, after all, primarily an examination of geography and not familiarity with the specification.

Question 1(a)iii

The specification identifies food, medicine, building materials and fuel resources as goods provided for 'indigenous and local people'. However, as with the mark scheme for Q1 (a) (ii), so too was the mark scheme for this question expanded to allow for inclusion of goods that are not explicitly mentioned in the specification. This included, for example, timber as well as the oil, coal and gas resources that may very well end up benefiting indigenous communities and which were a clear focus of this year's paper. It also included derivatives of the goods such as paper which is quite reasonably seen by candidates as a resource derived from the taiga and identifies as such in the accompanying text for Figure 6.

(iii) Name **two** of the goods provided by forests.

1 Paper production and timber fossil fuels (2) resources

2 medicine

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Examiner Comments

The candidate offers four examples here. As it happens all four would be credited but it is a problematic approach. In these 'State', 'Identify' or 'Name' questions the first two answers would have to be taken and the rest ignored or candidates would be able to offer as many answers as they like which would be unfair on those who offer just two as instructed.

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Examiner Tip

Follow the instructions in the question.

(iii) Name **two** of the goods provided by forests.

1 Medicine Medicine

2 Wood

ResultsPlus
Examiner Comments

A very common couple of choices.

Question 1(c)

This was generally well answered but it did differentiate, and answers from candidates at the lower end of the cohort's ability range found it challenging and many could only offer one feature of the climate as a driver of taiga adaptations, usually winter cold. Nor did many have the capacity to identify the aridity of the taiga climate with its characteristically very low winter precipitation. Putting these ideas together to translate 'precipitation' into snowfall was challenging for some. The best answers identified that there were five months when average temperature was below freezing point and that the length of the winters is especially challenging. Consequentially, the candidates that read this question carefully tended to do better than the ones that did not. Too many responses missed the 'winter climate' part of the question and gave answers explaining how the tree was adapted to the higher temperatures and precipitation in the Summer. Some had very good knowledge of the trees of the Taiga whilst others got them confused with trees found in the tropical rainforest mentioning 'buttress roots' and 'big canopies with large leaves'.

(c) Study Figure 3.

Using data from Figure 3 and your own knowledge, explain **two** ways in which the winter climate of the taiga influences the characteristics of its trees.

(4)

1 The low temperatures causes trees to sometimes freeze, or get covered in snow, meaning that they can't perform photosynthesis. To help this, the trees have a cone shape to help snow slide off, as well as pine needles ~~are~~ with thick layers to still be able to perform photosynthesis.

2 They also have tall long trunks, which can bend in the wind. This is crucial as they would otherwise get blown down in the winter climate of the taiga.

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Examiner Comments

Despite the false start in the suggestion that the trees 'sometime freeze' this is a 4-mark 'Explain two...' question. So, unlike the 'Name...' command word used for Q1 (a) (iii) these questions do allow us to take the 'or get covered in snow' answer as the climate-related starting point for one mark point followed by the adaptation. The second answer is unusual and strictly speaking Figure 3 offers no view about the windiness of taiga climates. However, the question asks for data from Figure 3 and ' your own knowledge...' so this approach is legitimate here.

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Examiner Tip

If you asked to 'Use data...' from a Figure, as in this question, remember that 'data' is just another word for 'information'. It does not have to be numeric data although that can often be the simplest way of satisfying the requirement of the question.

(c) Study Figure 3.

Using data from Figure 3 and your own knowledge, explain **two** ways in which the winter climate of the taiga influences the characteristics of its trees.

(4)

1 One way in which the winter climate of the taiga influences the ~~the~~ characteristics of trees is by making the ~~leaves become evergreen~~ trees, evergreen. This is because there is not as much sunlight in winter climates, meaning trees need to have more chlorophyll for more photosynthesis.

2 Another way in which the winter climate of the taiga influences the characteristics ~~of~~ of its trees is by

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Examiner Comments

An unusual example given that the first part is very strong but there is no second adaptation here at all.

Question 2(a)

This question is very tightly tied to 8.1b and 8.2b in the specification. It is reasonable to comment that nutrient recycling is a challenging concept and a corner of the specification that presents a challenge, especially the rapidity with which nutrients are recycled in the rainforests when compared with both temperate regions but especially taiga and tundra biomes. Those candidates who had been introduced to the idea of net primary productivity and the concept of a thermal growing season had the tools to explain why, with its very short growing season and challenges such as its aridity, biomes such as the taiga and tundra had much lower rates of biodiversity. There were some very good answers from those who had this biogeographical foundation but also many who couldn't get much beyond an assertion that warmer and wetter environments were more diverse.

2 Use Section B (pages 6, 7 and 8) in the Resource Booklet to answer this question.

(a) Using your own knowledge, explain **one** reason why tropical rainforests have higher levels of biodiversity than the taiga.

(2)

One reason is the quality of soil. The soil in tropical rainforest is much more nutritions so allows a vary of plants to grow.

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Examiner Comments

A standard response. Of course it raises the question of why tropical soils are richer in nutrients and the same question might once have had a four-mark tariff expecting more of candidates in breaking down the nutrient cycle. That would be an appropriate route in delivering this material in the classroom.

2 Use Section B (pages 6, 7 and 8) in the Resource Booklet to answer this question.

(a) Using your own knowledge, explain **one** reason why tropical rainforests have higher levels of biodiversity than the taiga.

(2)

The tropical rainforest has better climate which makes it easier for the ~~spe~~ different species # to survive

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Examiner Comments

This is a typical one-mark response which would probably be quite frustrating for the candidate, because it is more likely than not that they could have added the missing details of tropical rainforest climates. A simple reference to high rainfall and/or the relatively high temperatures would have illustrated what they meant by a 'better climate'.

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Examiner Tip

Avoid value judgments such as 'better' or 'worse'. Better or worse in what sense?

Question 2(b)i

There was much more variation in responses to this question than had been expected given that the answer was to be found in the second bullet point on Figure 4 which clearly states that 'Extracting the oil from the sand requires energy, water and the removal of all vegetation'. The not inconsiderable minority who somehow missed this, worked very hard to find alternative answers such as 'to allow buildings' or the development of 'roads'.

(b) Study Figure 4 in the Resource Booklet.

(i) State **one** reason why deforestation has taken place in this area.

for resources within its land like oil

ResultsPlus
Examiner Comments

A standard response and, happily, the commonest one.

plants can survive.

(b) Study Figure 4 in the Resource Booklet.

(i) State **one** reason why deforestation has taken place in this area.

(1)

Due too its natural resources palm oil trees can be found, ~~use~~ and its used in most of our chocolates /food

ResultsPlus
Examiner Comments

This was not credited. Given the choice of Canada as the focus of this examination paper and the information available to the candidates about the taiga, palm-oil is not appropriate.

Question 2(b)ii

Although some candidates will have covered the tar-sands industry, it is not reasonable to expect candidates to have done so and therefore have this answer as part of their AO1 battery. However, it is reasonable to expect them to know that the taiga is the dominant forest biome in Canada because both the introductory text and Figure 2 explicitly show that and they will also have been exposed to world biome maps as part of this Topic 8 unit. Given the caption text which states that Figure 4 is 'A production site for oil extraction in Alberta, Canada', that really should have been enough.

Question 2(c)

In many respects, this question built upon candidates' understanding of biodiversity that was the focus of Q2 (a) but, as addressed in the commentary for that question, those foundations were often inadequate. There was a good deal of useful information included in Figure 5 to help them build their answer. However, it would appear that some missed the point that the countries listed here are, as stated in the title of Figure 4, 'Information about the six most forested countries ranked by their area of forest'. Those that had some understanding of the relationship between biodiversity, resources and population carrying capacity drawn from their work on Malthus and Boserup were better equipped to use the Figure 5 information effectively.

(c) Study Figure 5 in the Resource Booklet.

Using evidence from Figure 5 and your own knowledge, explain **one** reason why population densities are higher in some biomes than others.

(2)

Population densities seem to vary from forest area and type of forest. For example Russia has the lowest population density being 8/km^2 and its main type of forest being the cold and dry Taiga. Whereas China has a density of 149/km^2 and had a ~~a~~ warm temperate forest which can influence more people to live there.

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Examiner Comments

There is a clear and correct use of Figure 5 and there is enough explanation here for the second mark by contrasting the 'cold and dry' taiga climate with the more temperate and 'warm' Chinese climate.

ResultsPlus
Examiner Tip

When candidates are instructed to use evidence from a figure then they must do so.

(c) Study Figure 5 in the Resource Booklet.

Using evidence from Figure 5 and your own knowledge, explain **one** reason why population densities are higher in some biomes than others.

(2)

Some countries have higher population densities due to them having a high population but a lack of freespace for housing, like China.

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Examiner Comments

This response does not quote any evidence from Figure 5, and what follows cannot be offered up as evidence that they have looked at the resource. The 'explanation' offered for high densities is high populations which is largely untrue.

Question 2(d)

This was a straightforward question which produced many 2-mark answers. One unexpected route taken was to interpret the fourth bullet point in Figure 6 as though the flooding of 'over 50,000 km2' was an unintended consequence of building '600 large dams' rather than the _raison d' etre_for their construction.

(d) Study Figure 6.

Using evidence from Figure 6, explain **one** negative impact of developing hydroelectric power (HEP) in Canada.

(2)

One negative impact of developing hydroelectric power in canada is that a renewable energy which means its [illegible] use So; its not long lasting and has a very high energy consumption uses to much energy.

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Examiner Comments

There is no clarity to this answer and the comments about 'very high energy consumption' are not explained. Given that Hydroelectric Power (HEP) is in the question there is no credit for mentioning it in the answer. So, 0 marks for this exemplar.

(d) Study Figure 6.

Using evidence from Figure 6, explain **one** negative impact of developing hydroelectric power (HEP) in Canada.

(2)

one negative input is that it has destroyed over 50,000 km^2 area by flooding. This means a loss of biodiversity for Canada as habitats are destroyed and loss of animals.

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Examiner Comments

This is a well-focused answer which picks up the first mark by referencing the impact on flooding and then develops it by mentioning the 'loss of biodiversity' that results.

Question 2(e)

This question produced a kaleidoscopic set of responses from those that offered tautologies of the 'human impact is greatest in areas where more people are found', to sophisticated arguments that suggested that 'the areas which are home for indigenous people are likely to be less impacted by human activity because they have a sustainable relationship with the taiga'. It is worth commenting that the reverse argument would also be credited arguing that the very existence of indigenous communities is likely to be disturbing. There were some answers referencing USA being very close to the Canadian taiga and therefore more threatened. There were others who seemed to think that the Canadian southern border was the Atlantic Ocean, presumably missing the reference to 'Border with the USA' on Figure 6. It is reasonable to expect GCSE geography candidates to have some superficial background knowledge but, as a principle, it is not assumed to be detailed or, in this case, add very much to what the booklet tells them about Canada. The key to assessment is whether or not the answer in plausible given what they have been told.

(e) Using evidence from Figure 6, explain **two** reasons why human impact on the taiga is greater in some areas of Canada than others.

(4)

1 Some areas have more ~~exten~~ extensive human impact due to the forest having over 600 ~~are~~ first nations indigenous communities, which they may not want anything to do with their land.

2 Because ~~most~~ most of canada's taiga is owned by the government, there is still some parts ~~that~~ that isn't, which means the parts that are not owned don't get the support to have any impact on their area.

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Examiner Comments

This response illustrates an important point. Two legitimate ideas are launched here. Firstly, the impact of 600 first nations on the forest and secondly the impact of government ownership of much of the taiga. Both are legitimate and if they were the only comments made it would score 2/4, However they try to extend both points. In the case of the impact of indigenous people it is made clear that they have a 'more extensive impact' although it is not clarified what 'not want anything to do with their land' means but we know that this impact is of considerable importance. The impact of government ownership is equally unclear although we are told that the areas that are not owned by the government 'don't get the support to have any impact on their area'. Neither extension is really convincing but the candidate has tried to say that they have made a difference and scored 4/4 as a consequence, albeit not the best 4/4 response.

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Examiner Tip

Use 'Firstly...' and 'Secondly...' to flag up the two points that you are making in the 'Explain two...' questions.

(e) Using evidence from Figure 6, explain **two** reasons why human impact on the taiga is greater in some areas of Canada than others.

(4)

1 Human impact is greater in the south of canada, as shown in figure 6. This is beer sinve the climte in the south is cemer than the north, more people live there so more damge is done to taiga forest there.

2 There is also less human impact in the north becase much of the climate in the far north of canada is tundra, as shown in figue 6, so it is too cold ~~for~~ for forests to grows so less imer is done due to less trees.

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Examiner Comments

This answer focuses on climatic variations and the first part is legitimate stating that 'the climate in the south is warmer than the north' and so 'more people live there' and consequently 'more damage is done to the taiga'. However, the second part is simply an inversion of this, to it gets colder as you go north, which is not rewardable and then made even more problematic by the reference to the tundra, thus straying from the question's focus on the taiga. So 2 marks for the first part but 0 for the second.

Question 3(a)iii

The first mark was easily come by but the second often proved to be elusive. Very few went down the economic route and those who did usually bolted this onto a statement about the climate. As referenced earlier it was not expected that candidates would know much about that climate other than that offered by Figure 3, so answers which suggested that because it was very cold in Canada therefore there wasn't much sunshine were credited despite the obvious error in that reasoning.

(iii) The amount of energy produced by solar power is too small to be shown on Figure 7.

Suggest **one** reason why solar power is unimportant in Canada's energy mix.

(2)

Sun's rays aren't concentrated as Canada is located very North so solar power doesn't produce a lot of energy

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Clearly expressed and a good answer from a candidate who has grasped the reasons for variations in the concentration of solar energy.

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Remember that the phrase 'Suggest one reason...' is an acknowledgment that you are not expected to know anything specific about Canada's solar energy but you are invited to offer a possible and plausible reason for its limited contribution to the country's energy mix.

Question 3(b)

For the first time candidates who failed to show their working, as requested, were still rewarded with that mark just so long as their answer was correct. The logic here is inescapable. If you get the right answer then your 'working' must also be correct. This logic, long applied in other subjects, is now applied to GCSE and A level Geography. Most candidates scored well with this 'calculate question'. The commonest error was the failure to round the result correctly.

(b) In 2022, Canada's exports rose by 142 billion US$.

Oil, gas and coal exports made up 82 billion US$ of this increase.

Calculate the percentage (%) of the increase in exports contributed by the oil, gas and coal industries.

Give your answer to **one** decimal place.

Show your working below.

(2)

$\frac{82}{142} \times 100 = 57$

57 %

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A common error was the failure to follow instructions over rounding so the method is correct but not the execution.

Question 3(c)

This was well answered by many candidates. The usual route was to identify the contribution to exports with some numeric data to support that point and a second point about employment, again with numeric data to support. This was an exercise in selecting the right elements from Figure 8 and although other routes were possible by using Figure 7 that needed more work for the candidate and an ability to understand how to interpret cumulative data from that graph.

(c) Study Figure 7 and Figure 8 in the Resource Booklet.

Using evidence from Figure 7 and Figure 8, explain **two** reasons why fossil fuels are important for Canada's economy.

(4)

1 30% of Canadas exports are possil fuels, meaning the more possil fuels exported, the more income which contributes to canadas economy

2 a relatively large sum of canadas workforce is employed in the energy industries (canos taxes pay towards canadas economy)

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This is an example of the most direct way of gaining 4 marks. The second of these is quite sophisticated with its focus on tax revenues.

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Examiner Tip

Try to differentiate between what might be good for people and what might be good for governments.

Question 3(d)

The two 8-mark 'assess/evaluate' questions on this paper and the final 12+4 (SPaG) decision-making Q4 carry half of the total marks for this paper and thus should occupy at least half of the candidate's time. Given that this paper has fewer marks attached to it (64 as opposed to 94 for both Paper 1 and Paper 2) time should really not be a major constraint. Nonetheless, the examining team widely reported the number of short answers to all three of these questions and other candidates who appear to have offered brief responses to this question and Q3 (e) preferring to prioritise Q4.

When assessed alongside previous 8-mark questions on this paper this question is not especially demanding. It focuses on a key element of Topic 9 and suggests a structure that would ideally assess how economic development (the focus of the graph), climate (the focus of some of the data offered regarding Canada) and geography (especially population density) will lead to both spatial and temporal variation. In general, spatial variation was always in view just so long as at least one other country was mentioned which was generally the case. Temporal variation needed more active engagement in the deconstruction of the question.

Unsurprisingly most candidates focused on Canada with, in too many cases, not much more than a passing mention of the other countries and groups of countries shown on the graph. Relatively few looked at both variations over time and from place to place although some addressed this implicitly, those that did offered largely descriptive points rather than weighing their significance as required by an 'assess' command word. There was little or no assessment in many answers. Many just stated the difference using the resources to back up points.

A wide range of reasons were posed by candidates for this, with the most common being levels of development/affluence, house sizes, climates and transport needs. The strongest answers clearly stood out by using evidence to back up their points, whereas weaker answers were led by more generalised statements with either limited or inaccurate explanation. The very best candidates recognised that although the data presented was at a national level, energy use varies greatly within all countries and that the data for different regions or different social groups was notable. Those that saw the possibilities of this approach often used India to illustrate the urban/rural contrasts in energy use.

(d) Study Figure 9 in the Resource Booklet.

Using evidence from Figure 9 and your own knowledge, assess the reasons why energy use per capita (person) varies from place to place and over time.

(8)

The most significant reason is because due to the development of a country over time. In figure 9 we can see China's use of energy increase from 1990 to roughly 4000kwh to around 30000kwh. This would due to the countrys development and how the people in the country became more affluent. As this develops more people would be able to afford the use of energy therefore leading to an incline in use of energy per capita to increase. The most significant reason is due to the development ofe a country as more people are able to afford more.

On the other hand someone may argue that it varies from place to place too and over time due to the ~~access~~ country situation and how it affects the climate. From figure 9 we learn within canada the weather is extreme within winter and summer. Therefore heating is needed in both seasons. The effect of this makes some countys use of energy much high across the whole year as the weather enforces this. So due to the

countrys location the use of energy varies across the year depending on wether it is needed all year round or not. 4

In Conclusion, I believe the development of a country is the most significant reason because within a HIC a higher percentage of the country is wealthy and able to afford the energy use which we can see from the graph in figure 9. This compares to LIC where the population is less wealthy therefore less energy is spent on energy use.

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This is a sound level 2 response. It explicitly addresses both time to time and place to place although it gets into a bit of a muddle over both. The first paragraph is the most successful with its references to how development drives up consumption although it would have been more convincing if a link had been made to household income and consumption. The second paragraph focuses on seasonal changes which are then suggested to vary according to different climates but this isn't exemplified. The candidate wants to turn the question into whether spatial variations are more significant than temporal variations but this is not the focus of the question.

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Examiner Tip

Assessment begins with analysis which often involves breaking down a topic or issue into its component parts.

(d) Study Figure 9 in the Resource Booklet.

Using evidence from Figure 9 and your own knowledge, assess the reasons why energy use per capita (person) varies from place to place and over time.

(8)

~~The reason why energy use per Capita (person) varis from place to place over time is beause The most Significant reason why energy use per Capita (person) varis from place to place is beause of the~~

There are ~~[illegible]~~ reasons like Car ownership, the climate, house sizes ~~[illegible]~~ for why energy ~~per~~ use per Capita (person) varis from ~~the~~ Place to Place and over time. ~~[illegible]~~ LIC and HIC affect the energy use.

The most Significant reason why energy use per Capita varis from place to place and overtime is beause of ~~Canada's~~ of climate in the Winter and Summer. As shown in figure 9, The climate is extreme So heating in Winter and cooling and Summer are both needed. Another reason why energy use per Capita varis from place to place and overtime is beause of ~~the~~ large housing ~~So more energy use is required in places like~~ which have large floor area ~~So [illegible]~~ energy use is required ~~As shown in figure 9 9 Canadian [illegible]~~ average Some houses may be smaller in some contris than other contris for example Canada ~~[illegible]~~ has larger houses in the UK Some more energy is required in ~~[illegible]~~ Canada then in the UK. As shown in figure 9 Canadian houses are large, averaging a floor ~~[illegible]~~ area of $130m^2$, whilst ~~[illegible]~~ UK houses are on average $76m^2$.

Another reason why the average use of energy ~~[illegible]~~ per Capita varis from place to place and over time is beause ~~[illegible]~~ some contris require more electricity then other contris for example Canada and the UK. Electricity is more Expensive in some contris and ~~[illegible]~~ average ~~[illegible]~~

different incomes are different in some countries than other for example the Canadians use more electricity and their average income is higher than the UK, however Canada's electricity is more cheaper as more more people need energy and electricity is more important in Canada than in the UK. As shown in figure 9 Canadian electricity costs about 0.12 US$ per kWh, half of the price of electricity in the UK, whilst average incomes are higher in Canada than in the UK.

In conclusion I think that the most significant reason for why energy use varies from place to place and over time is because a country is [illegible] of LIC and HIC. This is because people in high income countries like the USA in about 40,000 kWh because people are more affluent in the USA meaning they can afford more energy and electricity whereas in a low income country like Brazil their use of energy is between 1990 and. However from 1990 when they were using about 40,000 kWh, in 2022 they were using just under 80,000 kWh this may be because the people in the USA are population in USA are more affluent so they may be able to afford renewable energy sources like solar power, they installed solar panels where the sun energy is converted to electricity. Whereas in a low income country like Brazil their energy use was about 10,000 kWh and they have increased their energy use, as in 2022 the energy use was just under 20,000 kWh so as they may be developing and their population may be increasing.

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This response starts with a list taken from the text embedded in Figure 9. There follows the clear identification that climate is the 'most significant reason for variations, both spatially and temporally'. That is supported by some evidence. What follows is something of a list which covers all the points made in the text from Figure 9. The answer then addresses the data from the graph with a discussion about development, population size and growth rate. It is a comprehensive answer which clearly meets the Level 3 criteria.

Question 3(e)

Overall, candidate responses to this question showed a clear engagement with the topic and a general understanding of global carbon emissions. However, there were some recurring issues that limited the depth of assessment and the ability of candidates to fully meet the demands of the question.

A common trend was an over reliance on AO4 – application and explanation – with many candidates providing detailed descriptive accounts of emissions patterns without offering sufficient AO3-level assessment. While the evidence was often clearly explained, particularly in relation to global CO trends, many answers lacked the critical evaluation of *why* reducing Canada's carbon footprint might be difficult. As a result, responses often remained at a mid-level mark.

Notably, a significant number of candidates referenced Figure 9 rather than Figure 10, suggesting either a misreading of the question or a lack of precision in source analysis. This likely contributed to less targeted responses and a weaker connection to the core geographical data intended to support their assessment. Nonetheless the source materials found in Figure 9 and, indeed elsewhere could reasonably be used to answer this question. Given that the instruction in the question did not insist as in 'Using evidence only from Figure 10 and your own knowledge….'. it would have been unreasonable not reward relevant material whatever its source. In other words, other than the self-limiting impact of the less targeted answers that used Figure 9 referenced above, candidates were not in this case, disallowed from taking that route. In most years that would not be possible given the nature of the resources and their accompanying questions.

Where candidates did refer to Figure 10 correctly, the quality of assessment varied. Those who analysed the increases in CO_2 emissions from countries like China and Brazil often produced more sophisticated arguments, showing awareness of economic growth, industrialisation, and population size. In contrast, responses focusing on the Democratic Republic of Congo (DRC) tended to be underdeveloped. Explanations here were frequently basic or stereotypical, lacking the depth or geographical understanding expected, such as reference to energy infrastructure, per capita emissions, or historical emissions responsibility. These topics are challenging but central to the delivery of the three topics covered by this examination.

The best answers demonstrated strong synoptic thinking. These candidates successfully integrated Canada's own climate plans and policies (from Figure 10), and evaluated the economic and social challenges involved in implementation. Such responses clearly addressed the question's assessment focus, explaining *why* reducing the carbon footprint of most Canadians might be difficult, rather than merely stating facts or offering solutions.

(e) Study Figure 10 in the Resource Booklet.

Using evidence from Figure 10 and your own knowledge, assess the reasons why it might be difficult to reduce the carbon footprint of most Canadians.

(8)

Eg Canada has been able to reduce their carbon footprint from 16.6 tonnes in 1990 to 14.3 tonnes in 2021 (-14%). However, this process may be difficult as Canada intends to stop the use of coal and oil to generate electricity. This is unlikely to happen as if they rely on HEP, this will lead to more dams construction and more flooding, which creates environmental problems as forests will get waterlogged and people may be harmed. Canada also intends to replace oil as the main fuel used in transport, this could result in more oil being exported, so Canada would have a GDP more than $49,884, but this would mean cars would have to be electric for less CO_2 emissions. This won't happen as the energy use will not meet the demands of electricity as they will change

their way of generating electricity. Canada also wants to reduce CO_2 emissions from the oil and gas industry however, this can happen, but CO_2 will still be emitted by cars and CO_2 will still remain in the air, especially in the South as there are higher rates of deforestation for manufacturing, dam construction or mining.

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Examiner Comments

This response begins with a thoughtful discussion about the possibility of shifting Canada's energy mix away from coal and oil. The evidence is provided by the text accompanying Figure 10. The argument then becomes rather confused over the likelihood of electric cars becoming dominant in the auto market which the candidate rejects because 'the energy use will not meet the demands of electricity'. The final point is also confusing with CO2 'still remaining in the air, especially in the south.' This answer meets the criteria of Level 2 and was awarded 5/8.

(e) Study Figure 10 in the Resource Booklet.

Using evidence from Figure 10 and your own knowledge, assess the reasons why it might be difficult to reduce the carbon footprint of most Canadians.

(8)

The most significant reason for why it might be difficult for Canadians to reduce their carbon footprint is their reliance on fossil fuel energy sources for transport and their homes. For example, oil is currently the main fuel used in transport, and its use has not decreased in the last 35 years, showing its importance and reliance for Canadian people. In addition, fossil fuel energy sources are vital for Canadian homes and insulation, during the long, cold winters: improving the insulation of Canada's homes will be costly and difficult to carry out, so reliance on fossil fuels for heating might continue.

Another large challenge facing the Canadian people and their attempt in reducing emissions is the importance of the gas and oil industry in Canada's growth. Despite the government wanting to stop support for these industries, they are vital in Canada's economy. Over 30% of their exports are from these energy sources, and losing this would be

irreplaceable and costly, as it would lower the GDP per capita and cause a huge loss of jobs, for hundreds of thousands of Canadians. The tonnes of CO_2 per capita has only reduce by 14%, which is half of the USA's improvements, as well as China, making Canada a less sustainable high income country.

In conclusion, reducing the average carbon footprint in Canada would be a challenge due to the reliance of fossil fuels in their lives, as an energy source and fuel for transport, as well as industry and exports, which make up a lot of Canada's development and GDP.

(Total for Question 3 = 26 marks)

TOTAL FOR SECTION C = 26 MARKS

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Examiner Comments

This answer begins with a clear statement that transport and 'their homes' are the main obstacles to reducing their carbon footprint. The former point is developed by pointing out that 'oil is currently the main fuel used in transport and its use has not decreased in the last 35 years' which refers back to Figure 7. This is followed by the claim that the only way of reducing domestic reliance on oil for heating is 'the costly and difficult' task of improving insulation 'thus reducing the likelihood of reducing the reliance on fossil fuels for heating'. The essay then shifts to the central role of the fossil fuel energy to Canada's economy both in terms of its GDP and the employment generated. The relative performance of Canada in reducing its carbon footprint draws a comparison with the USA which is thoughtful. This is a confidently written, well-focused answer and clearly a good level response.

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Examiner Tip

Try to use as much material as possible from the resource to provide evidence for your analysis.

Question 4

Candidate responses to this decision-making exercise showed a generally strong level of engagement and a thoughtful effort to evaluate the options presented. There was a relatively balanced spread across the three options, although Option 1 was the clear 'favourite,' with the others often seen and described as 'too extreme'. For the most part candidates were confident in forming their own judgements based on the material provided and their wider geographical understanding. For a significant number one route to making these judgements was to weigh short-term gains, perhaps economic, with long-term losses, perhaps environmental. The 2024 Q4 specifically asked the candidates to go down this route. These answers might have been even stronger if candidates had shown an awareness that environmental impacts clearly have economic consequences, both short-term and longer-term.

The depth and quality of justification varied depending on the option chosen. The large number of candidates who selected Option 1 often fell into the trap of rewording or repeating the question rather than exploring how the Canadian government could realistically research and implement the proposed strategy. This limited the strength of their argument, particularly in terms of AO3 assessment and the practicalities of delivering the stated outcome of greater research and thus the expansion of renewable energy.

Those candidates who chose Option 2 frequently demonstrated strong ethical awareness and frequently made a moral case for giving precedence to the First Nation indigenous communities, with many giving detailed and thoughtful responses on the importance of Indigenous autonomy and environmental stewardship. However, these answers often lacked a fuller discussion of the economic consequences or viability of this choice, which reduced the balance and depth of their justification.

In contrast, those who opted for Option 3 were often more focused on the economic benefits, including arguments about national growth and the potential to reinvest in environmental solutions. These responses were often stronger overall because not only did they provide clearer justifications, they also showed more critical thinking in evaluating the potential flaws and trade-offs of the option. These candidates tended to access higher AO3 marks through more balanced and structured reasoning.

In terms of assessment objectives, AO2 was particularly well handled, with many candidates effectively applying their geographical understanding to the context of Canada. Where AO4 was used, it was often applied well, especially when candidates drew directly from the Resource Booklet. However, a significant number of candidates missed out on relatively accessible marks by not fully utilising the resources provided—an area where greater emphasis in preparation could lead to noticeable gains.

While AO3 (evaluation and judgement) was attempted by many, it often appeared in the form of discussing all three options briefly, rather than offering a well-supported, focused argument for the single selected option. More confident use of geographical understanding to justify their chosen approach would have strengthened many answers.

SPaG was generally strong across responses, with most candidates demonstrating sound structure and clarity of expression. However, the lack of precise geographical terminology and

some repeated spelling errors (including terms taken directly from the question or resource) prevented some candidates from achieving the highest marks in this area.

4 Study the three options below for how the Canadian Government should manage Canada's energy resources and the environment.

> **Option 1:** Increase the exports of fossil fuels and use the income to research and expand renewable energy.
>
> **Option 2:** Stop the exploitation of the taiga for energy production unless approved by the indigenous communities who live there.
>
> **Option 3:** Increase taxes on fossil fuels to reduce consumption even if this reduces Canada's economic growth.

Select the option that you think the Canadian Government should choose to benefit both its environment and its economy.

Justify your choice.

Use information from the Resource Booklet and knowledge and understanding from the rest of your geography course to support your answer.

(12)

Chosen option

Option 1

Firstly, increasing the exports of fossil fuels increases the income for the economy. Over 30% of Canada's total exports are fossil fuels (fig. 8). This means that Canada relies on this sale of fossil fuels in order to provide for the economy, proven since the GDP per capita in 2021 was 49,884 US$ in 2021 (fig. 10). From 1990, most fossil fuel energy consumption has increased:

gas, in 1990 1,900 TWh, in 2023, 3,500 TWh, [redacted] oil in 1990 - 1,000 TWh, in 2023, 1,200 TWh. (fig. 7). This shows that the baseline of all energy is mainly fossil fuels, and people heavily rely on them. Canada had an energy use per capita of 103,000 kWh in 2022, (fig 9), which demonstrates that Canada [redacted] uses lots of energy. ~~Using~~ Selling the increased exports of fossil fuels would create lots of income, which could be used to increase energy security and diversify the energy mix.

Additionally, using the income to research and expand renewable energy is very beneficial. This is because renewable energies can be replenished at a [redacted] faster rate than they are being used, meaning that they can be infinite. Canada uses nuclear power, which is the 6th best replacement of non-fossil fuel energy sources, Hydroelectric power which is 1st, wind energy and biofuels (fig.8). This shows that Canada already has a diverse energy mix, and researching and expanding renewable energies like these allow people to rely on multiple energy sources, increasing the energy security. Also, these energies are used to produce electricity. 5.8 billion US$ was paid to Canada by USA for imports of electricity in 2022 (fig. 8). This highlights that Canada can maximise its profits and make its money back after researching and expanding renewable energy alternatives.

However, some may disagree with option 1 as it is using up all of the fossil fuel reserves at once. This means that there is no fuel to back up the country in case of a disaster or emergency. Furthermore, the exploitation of the taiga biome can destroy ecosystems and habitats, and logging trees releases their CO_2 stores into the atmosphere when cut down and destroyed as it plays an important role in absorbing CO_2 (fig. 5) which speeds up the human enhanced greenhouse effect and therefore climate change. Also, some renewable energies cause negative impacts on the environment. The taiga is home to over 600 indigenous communities, bears, wolves, caribou and moose (fig. 6). Power such as hydroelectric can damage these forests as more than 600 large dams produce electricity, many in the taiga. Over 50,000 km^2 have been flooded as a result of dam construction (fig. 6). This means that even renewable energy methods cause hazardous and dangerous impacts to the taiga and its inhabitants.

Some might disagree with option 2 because the entirety of Canada's economy might be decided by 600 indigenous communities (fig. 6). This creates uncertainty, and people would have to rely on the use of wind, HEP, and nuclear energy, which has very little consumption across Canada - In 2023:

Wind energy - 3,800 TWh, HEP - 2,750 to 3,700 TWh, nuclear - 2,500 to 2,750 TWh; which is not a lot ~~compared~~ compared with the consumption of fossil fuels (fig. 7).

Some might disagree with option 3 because the increased taxes reduce Canada's economic growth. More expensive taxes on fossil fuels could also make the population angry and may may no longer be able to afford the services such as transport, heating and cooking in homes, and electricity, which lots of people commonly use (fig. 9). A reduced economic growth also means that the GDP per capita might ~~raise~~ decrease ~~and parts of Canada~~ (fig. 10), and parts of Canada might experience decline and competition from cheaper energy and fossil fuels from foreign countries.

In Conclusion, I believe that option 1 is the best as it will lead to an increased economy and could provide a sustainable future for Canada's energy consumption with a more diverse energy mix, more sustainable energy sources and an increased energy security for the population.

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Examiner Comments

This is strong response built around a familiar model in that the positive elements of the chosen option (Option 1) are dealt with first with counter arguments and alternative options later. The positives for Option 1 begin with an economic argument that quotes data from several resources and makes the claim that 'selling the increased exports of fossil fuels would create lots of income'. The following paragraph makes the reasonable claim that Canada 'already has a diverse energy mix' which will provide a platform for on-going research. The point about exports to the US is used to emphasise the merits of the Option 1 pathway by which Canada can 'maximise its profits and make its money back'. The following page begins with the counter argument. The candidate suggests that there is a risk of 'using up all of the fossil fuel reserves' and 'furthermore, the exploitation of the taiga biome can destroy ecosystems and habitats'. There is also a developed acknowledgement that renewable energy is not always eco-friendly as illustrated by the damage caused by Hydroelectric Power (HEP). The essay then moves into the issues raised by the two options that are not selected stating that 'Some might disagree with Option 2' as their starting point, an argument repeated later for Option 3. This is a comprehensive answer with very good AO4 skills and strong AO2 'accurate understanding of concepts'. The AO3 top level descriptor stresses that level 3 answers would deliver 'a balanced, well-developed argument that synthesises relevant understanding coherently'. This essay does that but please note that there are other ways of reaching the top of the mark range and some 12/12 answers are better than others.

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Examiner Tip

Don't forget that all the options offered will have advantages and disadvantages.

4 Study the three options below for how the Canadian Government should manage Canada's energy resources and the environment.

Option 1: Increase the exports of fossil fuels and use the income to research and expand renewable energy.

Option 2: Stop the exploitation of the taiga for energy production unless approved by the indigenous communities who live there.

Option 3: Increase taxes on fossil fuels to reduce consumption even if this reduces Canada's economic growth.

Select the option that you think the Canadian Government should choose to benefit both its environment and its economy.

Justify your choice.

Use information from the Resource Booklet and knowledge and understanding from the rest of your geography course to support your answer.

(12)

Chosen option

Option 2

Canada should stop the exploitation of the taiga for energy production unless approved by the indigenous communities. This is because there are 1.4 million First Nations indigenous people living in Canada (Introduction) who rely on the taiga for living and sustaining themselves. This means they should be consulted before their home regions are cleared for resources.

and 600 communities there are living (Figure 6)

Additionally, the exploitation of the taiga creates environmental problems such as climate change. This is because removing trees means less carbon dioxide is removed from the atmosphere enhancing the greenhouse effect. Moreover, the greenhouse gas emissions from the consumption of the fuel that is extracted would further contribute to global warming and climate change. The introduction states that three quarters of Canadians are concerned by climate change. This means it would not be a good idea for the Canadian Government to continue exploiting the taiga for energy because it would be going against the people's views. This means the Canadian Government should stop exploitation of the taiga.

However, ceasing the exploitation of the taiga would come with significant economic drawbacks. The energy industry contributed to 10% of the country's GDP in 2021 and employs 5% of the population is employed in the energy industry, according to Figure 8. Fossil fuels also account for 30% of all exports. This means without fossil fuels and HEP from the taiga, Canadian exports will be down, unemployment would rise and economic output would decrease. This would be disastrous for an already struggling economy. This means it may not be a good idea to cease exploitation of the taiga for energy.

On the other hand, ~~an~~ Option 1 would be not be suitable. This is because increasing the exports of fossil fuels would mean more

extraction is required and, therefore, more forests cleared. Figure 6 highlights the drastic impacts that humans have on the taiga. It states how 40% of the Canadian taiga has been disturbed by human activity and the damage done from the extraction of resources including fossil fuels is very hard to repair due to the fragility of the taiga biome. This causes habitat loss for the indigenous communities as well as bears, wolves, caribou and moose putting them at risk. This means the taiga cannot further be explored.

Option 3 would not be suitable because it has been tried before and failed. Justin Trudeau, former PM of Canada, introduced the Carbon Tax on fuel and energy driving up prices to heat Canadian homes and so causing the poorest of families to suffer immensely. The tax was extremely unpopular and played a key role on his downfall. The Carbon Tax was removed shortly after the current Prime Minister, Mark Carney, assumed office in an attempt to fix the Liberal Party's reputation relationship with voters. According to Figure 8, 91% of energy exports are to the USA and they are facing tariffs so it would negatively impact the economy.

In conclusion, the best option is Option 2 because it is the most viable economically and environmentally. Option 1 would cause too much damage and Option 3 would not work.

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Examiner Comments

As with the first exemplar this essay also begins with a very clear statement about the chosen option (Option 2) in that ‘there are 4 million First Nation indigenous people living in Canada who rely on the taiga for living and sustaining themselves’. This theme is developed on page 13 with an extended argument about the risks of climate change, the role of ‘people’s views’ and a definitive statement about 'the Canadian Government should stop exploitation of the taiga’. However, this candidate recognises that there is a major issue and they provide data about the current dominance of the energy sector in the present economy. It is worth noting that their chosen option ‘may not be a good idea’. Note the use of ‘may not'. That paragraph throws the option choice into question which is developed further on page 14 which returns to the damage done already to the taiga. The candidate then makes the case against Option 3 on the grounds that ‘it has been tried before and failed’, using very up to date evidence referencing the recent election in Canada and the tariff dispute with the USA. This is impressive material which is deployed effectively here. This is a another strong essay which has constructed a very different argument than that made in the other exemplar.

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Examiner Tip

If you have background knowledge use it as evidence in constructing your argument.

Paper Summary

This paper is very different from the other two GCSE units. Candidates need to be aware of those differences.

- Read all the questions before you start, especially the 8-mark and 12-mark ones
- Make notes in the resource booklet and underline/highlight key words
- 'Explain' is the dominant command word and is always either 'Explain one... ' for 2 marks or 'Explain two...' for 4 marks
- Section C will always have two 8-mark 'Assess/evaluate' questions
- The final question is always a 12-mark decision-making exercise - remember that all 3 of the options will have strengths and weaknesses.

Grade boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link: https://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

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