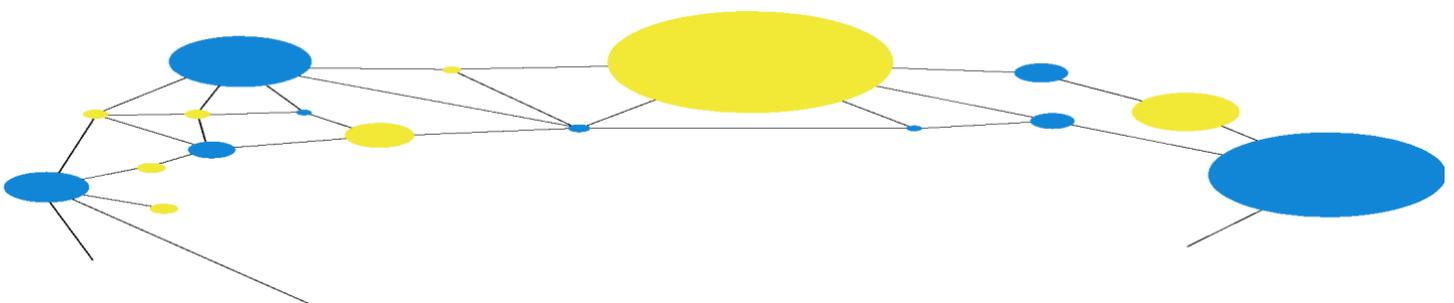


**IO3 Webquest - Transport**  
Developed by Hub Karelia

**ice-cdp**

<b>THEME ALLOCATED:</b>	360 minutes
<b>LEVEL:</b>	Expert
<b>TITLE OF THE WEBQUEST:</b>	Alternative transport, alternative energy
<p><b>INTRODUCTION</b> (It involves giving background information on the topic and, often introduces key vocabulary and concepts which learners will need to understand in order to complete the tasks involved. It should present a scenario and context for playing out the tasks in the WebQuest and it should be a fun, engaging and creative so as to draw the learners in):</p> <p>Looking at the development of civilization over the past centuries, it is easy to see how important the role of the development of transport was in the past and how it still remains important in the present time. If humanity were to use only the power of animals to transport goods and people, the world would look completely different today. Man has long set a goal - to travel faster. Improving and popularizing the movement of people and transporting goods has contributed to the development of tourism, trade, industry and numerous services, and even to the spread of education. Despite numerous undeniably positive results of transport development, its adverse impact on the environment has also become undeniable. Although currently ecological transport is beginning to conquer the market and people's hearts, still the degree of use and dissemination - leaves much to be desired.</p>	



**TASKS** (explains clearly and precisely what learners have to do, it should be motivating and interesting and where possible, it should include activities that contribute to the development of skills that they will use in their daily lives. Guidance should be given on how to present findings; for example, maps, graphs, essays, wall displays and diagrams):

You've been employed as a manager in a large forwarding company. Recently, the work of this company is regularly disturbed by numerous protests of environmentalists who try to draw the attention of management and investors to the destructive impact of the company's activities on the environment. As the company has recently signed several important contracts, you cannot afford delays. At the same time, the company's departments received a general recommendation to improve the environmental policy. The former department manager considered the introduction of changes to be impossible and unprofitable. Shortly after that he was dismissed from work. Developing an appropriate strategy to change the company's environmental policy could enable you to get promoted quickly.

You will be in the groups assigned at the beginning of activity. Within your group you will divide up to take on different roles which are listed in the process section.

To complete this task, you must complete the steps in the process below.

**PROCESS** (set of steps and research tasks using predefined sources that are predominantly web-based usually in a clickable form. This stage has usually one or more "products" that learners are expected to present at the end. These products form the basis of the Evaluation stage.

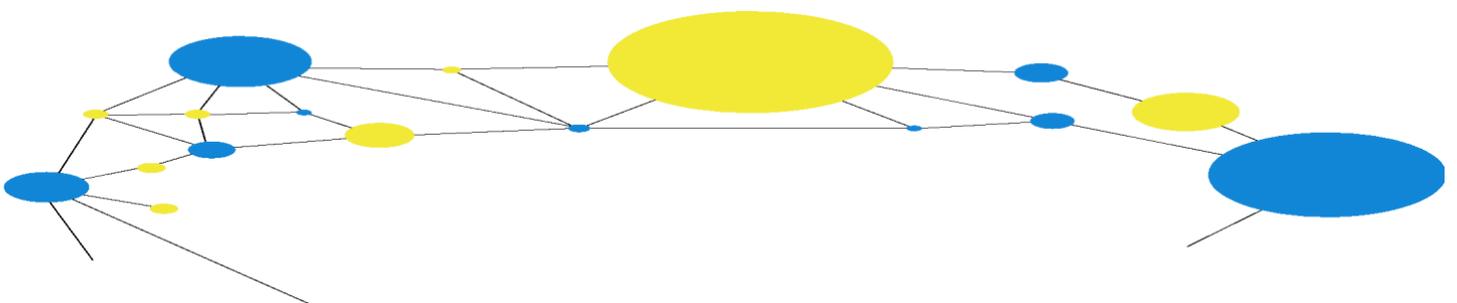
Assign yourself roles so that the group includes at least:

-2 research specialists, whose duties will include analyzing scientific studies supporting your theory and developing on their basis a short and meaningful text supporting your choice

-1 PowerPoint specialist, whose responsibilities will be to create an interesting PowerPoint presentation on the concept chosen and developed by you

-1 group leader, whose task will be to acquire the necessary materials, watch over time, motivate the group, as well as prevent conflicts within the group and counteract stress and a sense of pressure, if possible. If you have a problem finding a leader, choose the person whose suggestions you chose

The leader should remember to make your group aware of your time limits. You have 50



minutes to gather the resources you need, develop a short text and create presentations. After this time, you will receive an additional 10 minutes to prepare for the presentation. You can choose a group leader to present it in full, or share slides.

**Step 1 - Assessing the current situation of the company**

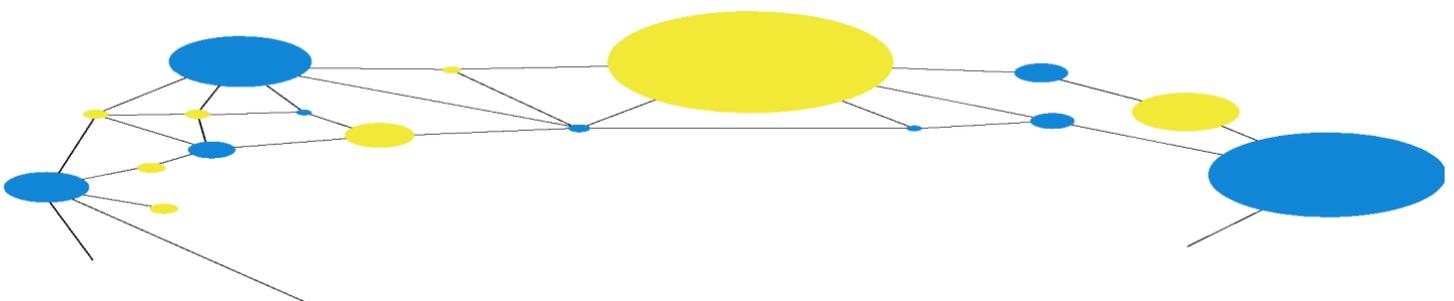
Analyze the impact of current company policy (using only diesel vehicles) on resource consumption and the environment. Choose one international and one national route (for example Paris-Berlin, Bristol-London, check how many litre of diesel fuel your chosen vehicle consumes and calculate the cost of transport taking into account today's cost of fuel.

**Step 2 - Brainstorm about other types of solutions / fuels / means of transport that you could use in your company.**

Develop the table and complete it according to the following instructions:

- List a few alternative energy sources that you could use in your company that would help reduce the environmental impact of your business. Each of the managers (including you) is obliged to provide one of the possible solutions (for example: propane, biodiesel, hydrogen, ethanol, electricity, natural gas), (Note: remember that as a company you provide services related to the international transport of goods and domestic passenger transport. If necessary, specify which of these activities)
- Briefly assess how this would affect tax deductible costs (would this result in additional costs, e.g. the need to hire additional employees, the need to buy new vehicles, infrastructure expenses etc.)
- Estimate to what extent a given solution would affect the company's environmental policy,
- Add in the table another item in which for comparison describe the current situation of the company (using diesel only)

Fuel	Costs for the company	Impact on environment	Other remarks




**Step 3 – Conduct the reach for available and emerging technologies.**

Search for technical solutions to reduce carbon dioxide emissions in the goods and services transport sector and provide examples and good practices for their use.

**Step 4 – Is green really green?**

Examine the recent studies on vehicle whole life carbon emissions. **(manufacturing, use, recycling/disposal)** And answer the questions: what are the practicalities of calculating whole life carbon emissions?

**Step 5 – Time to make a decision.**

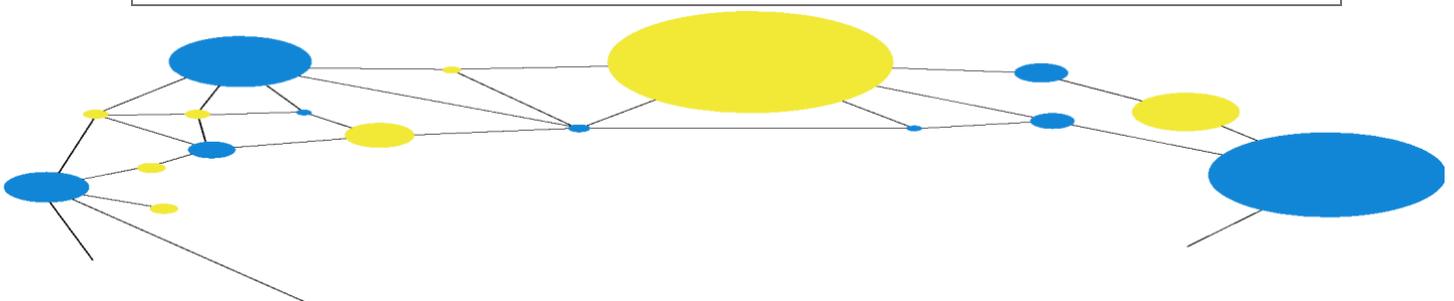
Your task will be to develop a report proving which of the solutions would be most beneficial for the company. The table you created is an important part of it. Your next task, and the next part of the report, will be to justify the rightness of your decision.

**Step 6 – Create a presentation!**

Presentation guidelines:

Remember to include issues such as:

- An introduction showing the current situation of the company
- Information about where the type of energy source you selected comes from and whether it is a renewable resource
- What kind of emissions arise during its use / combustion
- Price per liter / kg / other unit of this energy source
- His relationship with saving energy
- Impact on the environment
- Summary in which you compare the current and future situation of the company, if it agrees to introduce changes you have made (ecological, social, financial implications)
- Provide the sources of research developed
- Remember to use photos to make your presentation visually attractive, make sure you rely on solid research from reputable sources and take into account all necessary aspects of the project.



- Remember that this is a business presentation and should be kept in this form both in visual and substantive terms.

### Step 7 - Present your findings

Decide how to present your slides. It is the fruit of your joint work, so you can also share it, or choose your representative.

Imagine that you present it to your boss. Try to make the performances as professional and business as possible - after all, your promotion depends on him!

### Step 8 - Brainstorm after all group presentation and conduct discussions

For sure, each of the ideas has its pros and cons and this is a good time to discuss them! All participants mix and sit together. There is no division into groups anymore, they all form one large group. This will allow a fresher look at the alternatives presented. The teacher writes down all the solutions given by the groups and as a reminder asks the volunteer who worked on this solution to list the three pros of each. He then asks the rest of the participants to reflect on the disadvantages of each solution.

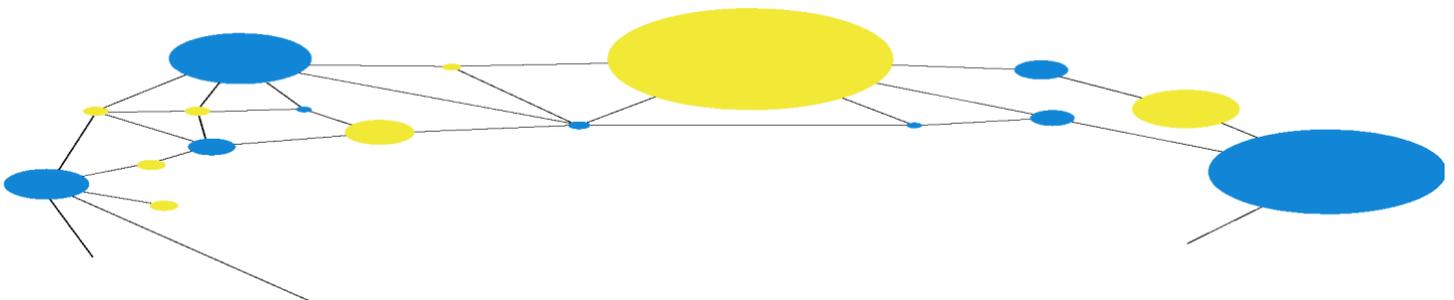
**RESOURCES:** For each step in the process, there should also be a series of links included (3-4 per step). These links should be for videos, articles, blogs, webpages, etc. that the learners can visit to help them to complete the task. Links should be embedded in the WebQuest to sites, pages, databases, search engines and so on.):

Below you will find links to several resources. Of course, these are just suggestions, additional resources can be found throughout the network. Make sure you use reputable and scientifically proven websites.

#### **Resources for Step 1:**

#### **Resources on alternative choices:**

- Alternative fuels - <https://www.choice.com.au/transport/cars/eco-friendly/articles/petrol-and-alternatives>
- Alternative fuels - <https://www.greenchoices.org/green-living/transport/alternative-fuels>



- Diesel and petrol vehicles emissions compared- <https://theconversation.com/fact-check-are-diesel-cars-really-more-polluting-than-petrol-cars-76241>
- Gasoline and the environment - <https://www.eia.gov/energyexplained/gasoline/gasoline-and-the-environment.php>

#### **Resources for Step 2:**

- Current fuel prices - <https://www.iru.org/resources/tools-apps/fuel-prices>
- Cost of Transitioning to 100-Percent Renewable Energy - <https://www.instituteforenergyresearch.org/renewable/cost-of-transitioning-to-100-percent-renewable-energy/>
- Switching to renewable energy is actually cost-effective – <https://www.popsci.com/renewable-energy-cost-effective/>

#### **Resources for Step 3 Conduct the reach for available and emerging technologies.**

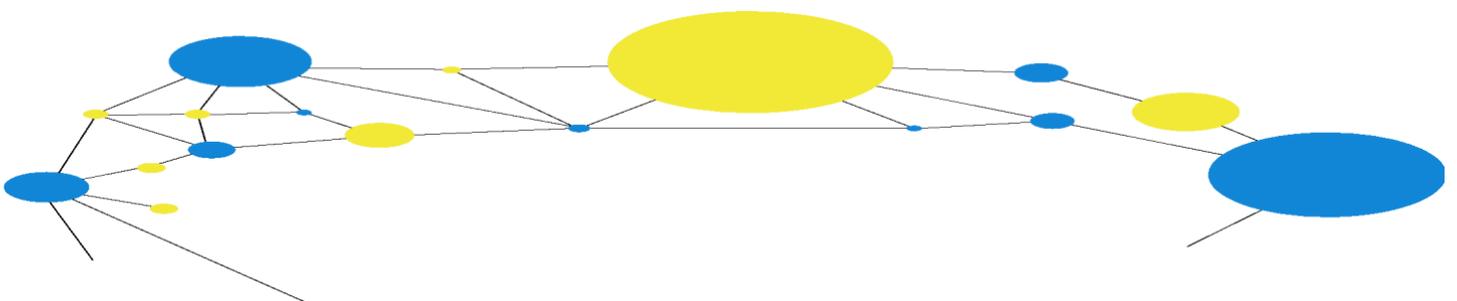
- Green transportation - [https://www.researchgate.net/publication/272420818\\_Green\\_transportation\\_Need\\_technology\\_and\\_challenges](https://www.researchgate.net/publication/272420818_Green_transportation_Need_technology_and_challenges)
- Ecological transportation - <https://www.youtube.com/watch?v=2M8FZiKQ798>
- Top Transportation Technology to Know in 2020 - <https://www.altexsoft.com/blog/new-transportation-technology/>
- Future Transportation Technologies To Look Forward In Future - <https://yourstory.com/mystory/six-future-transportation-technologies-future>

#### **Resources for Step 4: Is green really green?**

- Research on Carbon Emissions of Electric Vehicles throughout the Life Cycle - [https://www.researchgate.net/publication/335980525\\_Research\\_on\\_Carbon\\_Emissions\\_of\\_Electric\\_Vehicles\\_throughout\\_the\\_Life\\_Cycle\\_Assessment\\_Taking\\_into\\_Vehicle\\_Weight\\_and\\_Grid\\_Mix\\_Composition](https://www.researchgate.net/publication/335980525_Research_on_Carbon_Emissions_of_Electric_Vehicles_throughout_the_Life_Cycle_Assessment_Taking_into_Vehicle_Weight_and_Grid_Mix_Composition)
- How electric vehicles help to tackle climate change - <https://www.carbonbrief.org/factcheck-how-electric-vehicles-help-to-tackle-climate-change>
- Environmental footprint of electric cars <https://www.thegreenage.co.uk/tech/environmental-footprint-electric-cars/>

#### **Resources for Step 5: Time to make a decision.**

- Report writing tips - <https://www.skillsyouneed.com/write/report-writing.html>



- Making Informed Environmental Decisions - <https://www.nationalgeographic.org/lesson/making-informed-environmental-decisions/>
- Improving Environmental Decision Processes - <https://www.nap.edu/read/11186/chapter/4>

**Resources for Step 6:**

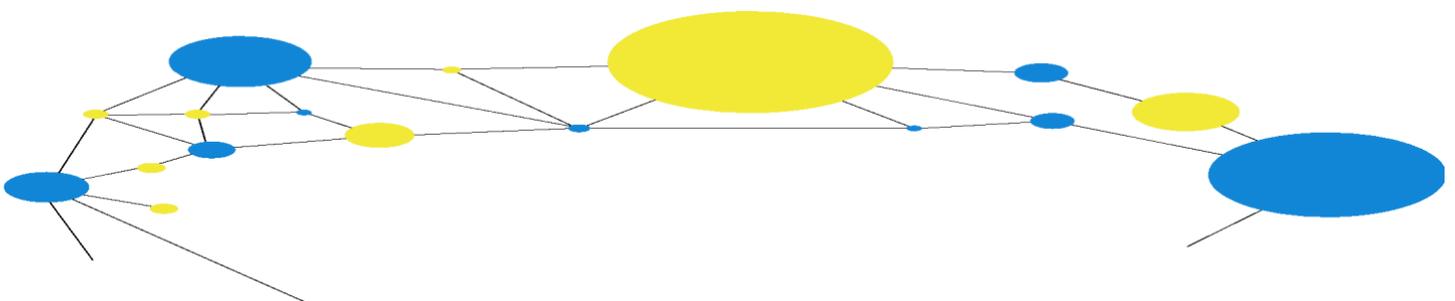
- How to Make Professional PowerPoint Presentations - <https://business.tutsplus.com/tutorials/professional-powerpoint-presentations--cms-29564>
- Tips for Preparing a Professional Presentation - <https://www.makeuseof.com/tag/10-tips-for-preparing-a-professional-presentation/>
- How to Pitch an Idea to Investors - <https://www.ryrob.com/how-to-pitch/>

**Resources for Step 7:**

- Selling an Idea: 6 Ways to Succeed in Conceptual Selling - <https://www.itagroup.com/insights/ways-succeed-conceptual-selling-ideas>
- Powerful public speaking - <https://www.entrepreneur.com/slideshow/299610>
- Mastering the art of public speaking - <https://www.inc.com/brent-gleeson/20-tips-for-mastering-art-of-public-speaking.html>

**Resources for Step 8:**

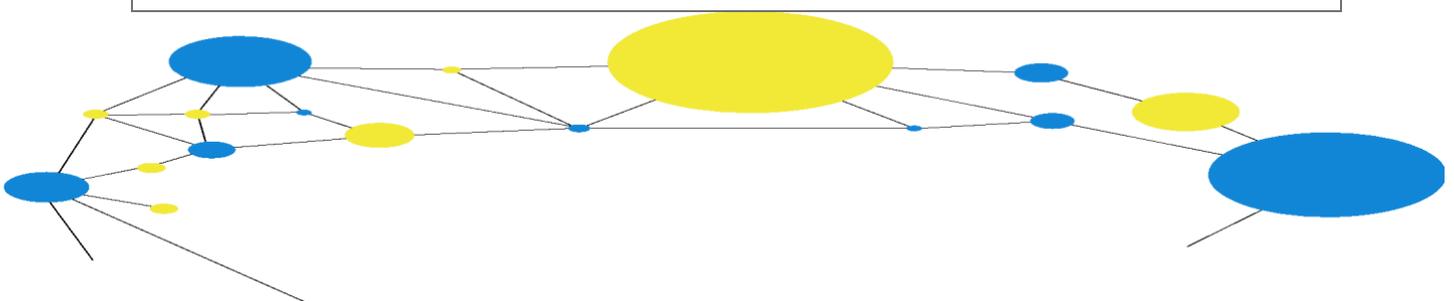
- Brainstorming techniques - <https://business.tutsplus.com/articles/top-brainstorming-techniques--cms-27181>
- Idea evaluation - <https://www.viima.com/blog/idea-evaluation-what-is-it-and-how-should-one-do-it>
- Judging creative ideas - [http://sar.org.pl/public/content/JUDGING\\_CREATIVE.pdf](http://sar.org.pl/public/content/JUDGING_CREATIVE.pdf)



**EVALUATION** (self-evaluation, comparing and contrasting of what the learners have learned, giving feedback to the trainer on how they feel, what they have learned):

On completion of this WebQuest, young adults will have achieved the following learning outcomes:

Knowledge	Skills	Attitudes
<ul style="list-style-type: none"> <li>● Factual knowledge about:               <ul style="list-style-type: none"> <li>○ transportation impacts.</li> <li>○ low-carbon fuels and technologies that are becoming available to reduce emissions</li> </ul> </li> <li>● Basic knowledge about air pollution and gases emissions from transportation.</li> <li>● Theoretical knowledge of energy efficient and environment</li> </ul>	<ul style="list-style-type: none"> <li>● Ability to compare the environmental impact using different types of fuels.</li> <li>● Understand, changes in behaviour and technology development have an impact on achieving sustainable transport.</li> <li>● Ability to outline the energy and environmental effects of transport activities and their significance.</li> <li>● Describe energy and environmental impacts of transport activities.</li> <li>● List 3 solutions for reducing transportation-related air pollution</li> </ul>	<ul style="list-style-type: none"> <li>● Awareness of the impact of transport on the social and environmental system.</li> <li>● Increased regard for the role and contribution of natural and renewable energy for a sustainable and decarbonized transport system.</li> <li>● Openness to understand that both technical and behavioural changes have a role in achieving transport sustainability.</li> <li>● Adopt the use of ICT tools.</li> <li>● Demonstrate competencies and communicate effectively in oral</li> </ul>



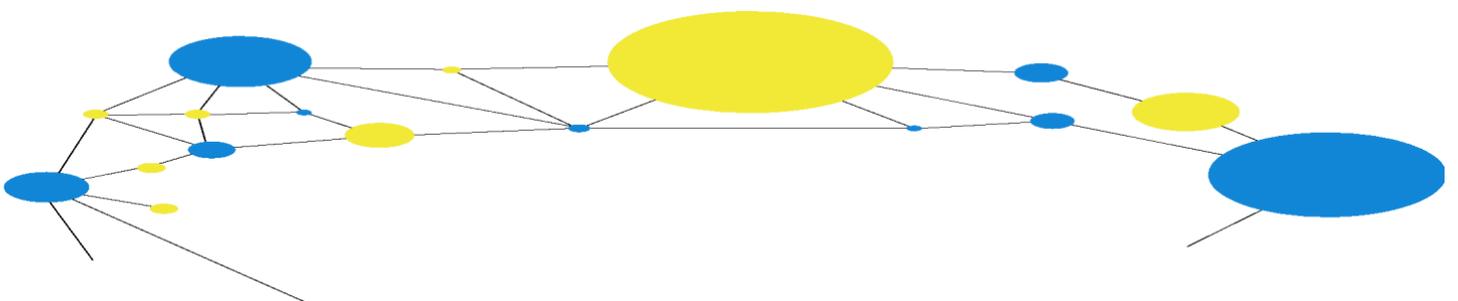
friendly transport model	<p>and climate change emissions</p> <ul style="list-style-type: none"> <li>• Recognise changes to be made in behaviour and techniques towards sustainability in the transportation field.</li> <li>• Ability to teamwork.</li> </ul>	and written presentations.
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As part of your self-assessment, please consider the following questions and answer honestly the following questions:

- What did I learn about the alternative fuels?
- Is using alternative energy in business profitable?
- Is it profitable to use only oil with frequent long journeys?
- What kind of alternative fuels causes the least additional costs (taking into account the costs when you decide to switch to it?)

Questions that might be used to start a discussion:

- Have you changed any ideas you used to have on the subject of fuels?
- What do you think you have learned through this challenge?
- Are there things you learned in this WebQuest that would make you want to change your habits? If so, what are they?
- Do you have a sense of accomplishment on completing this challenge?



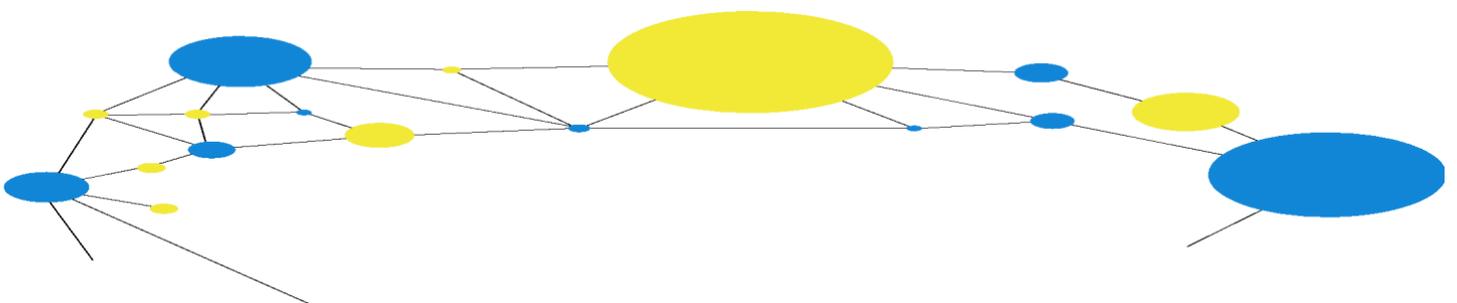
**CONCLUSION** (provides an opportunity to summarise the experience, to encourage reflection about the process, to extend and generalise what was learned, or some combination of these. Suggest questions that a trainer might use in a whole class discussion to debrief a WebQuest):

You completed the project tasks. We believe that thanks to its implementation you will be more aware of the impact of reducing CO2 emissions and the need to look for low-emission solutions for transport. We hope that, as far as possible, you will limit the consumption of fossil fuels and seek sustainable alternatives in order to mitigate the environmental threats resulting from the growing demand for energy.

The purpose of the work is twofold, on the one hand that you acquire the knowledge corresponding to the subject and on the other hand that you work on your ability to analyze and evaluate your work and that of your colleagues.  
Also with this work you will improve your computer media creation skills.

Did the webquest sparkle your interest? What do you think the future of transport will look like? What new technologies and fuels will be used in the next 10-20-30 years and more distant future? Why is it necessary to search for new sources of renewable energy?

We hope you found this activity entertaining and you have learned a lot.





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