

Emissions Calculator with an Emissions Data Base

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1. Introduction

- A brief introduction to your website idea. State the goals of the project.
 - Provide a website where users can input the type and amount (mass or volume) of a fossil fuel they burned, and the website will tell them how much emissions they have produced. The website also allows users to save their input & output to a MongoDB database. When needed, users can request to download the MongoDB collection.
- The values / benefits (tangible and intangible) this application can bring to a company/organization/end-user.
 - Users can immediately get a calculation result without looking up for emissions conversion factors on a type of fossil fuel and doing the math themselves to figure it out. They can also save these calculation results in MongoDB for further purposes such as data analytics or yearly emissions report.
 - Note: feature of analytics and yearly report is not included in this project.

2. Expected List of Features

- A brief list of features that you expect your website to support.
 - Drop down box to select fossil fuel type.
 - Input field for amount of fuel.
 - A button to run the calculator.
 - A button to save calculation results to MongoDB ("POST" method).
- Brief justifications for including these features.
 - Drop down of fuel type so that backend will know what fuel conversion factors to use.
 - Ability to Input amount allows users to input whatever amount they used.
 - Button to execute the backend calculator: get the amount input, get the fuel type, and perform the calculation.
 - Button to save allows users to store data for other purposes.

3. Market Survey

- Do a survey of the Web to find about five web sites that might have similar ideas as yours.
- Briefly compare the features of these applications with your application idea.

Website	Feature Comparison
https://app.sustain.life/	Doesn't provide calculator features. Users must input emissions mount to store and keep track of emissions
https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator	Doesn't have a database feature where users can store amount of fuel and emissions
https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx	Only allows users to calculate emissions based on miles of travel by airplane. No feature to allow fuel type selection, no database to save input and result either
https://www.carbonfootprint.com/calculator.aspx	Only allows users to calculate emissions based on a certain type of vehicles. No feature to allow fuel type selection and input amount of fuel
https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/	Only allows users to calculate emissions based on a certain type of vehicles and fuel efficiency MPG. No feature to allow fuel type selection and input amount of fuel. No Database to save data.

4. References

- Give references to any material / websites / books etc. relevant to your application idea
- Give the links to the websites relevant to your idea, that you listed in the section above.
 - <https://www.epa.gov/ghgemissions/household-carbon-footprint-calculator>
 - <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>
 - <https://ghgprotocol.org/Third-Party-Databases/Defra>