*[Instruction: Insert a short introductory paragraph here. Explain what your process was and why these abatement interventions should be recommended.]*

*Basis comprehensive literature review of academic research papers, industry reports, market-leading company publications and further studies, I am presenting my findings and recommendations for our client, Fast Cars.*

**Context:** The Paris Agreement and the economic aftermath of the more recent COVID-19 have made apparent to the global leaders, that for achieving a sustainable future, operations have to be completely aligned with Net-Zero Carbon targets. The “Big 8” value chains drive nearly 50% of annual global emissions and the automotive sector features prominently as a key contributor.

**Business Understanding: Fast Cars,** an automotive company, has conducted *a ‘cradle-to-grave’ assessment* and identified 21 key emission sources along the value chain. These sources can be categorized **as Scope 1** *(Emissions from operations under facility's control, including onsite fuel combustion)* and **Scope 2** *(Emissions from usage of electricity, steam, heat and/or cooling purchased from third parties)*, and **Scope 3** (others).

**Task Scope: *Categorize Scope 1 & 2 emission sources*** and ***recommend abatement initiatives***, to gain alignment with Fast Cars’ decarbonisation targets.

**Methodology:**

1. I have categorized the emission sources in the Value Chain into Scopes 1, 2 & 3.
2. I have then identified the abatement potential (citation) of levers, and mapped them to each emission source.
3. Approximated the abatement costs, based on the data provided (citation).

**Recommendations for abatement:**

**1. Emissions Source: Scope 2 Electricity for Fast Cars Manufacturing:**

**1.1. Initiative: Renewable Power in Production (40-55% abatement lever)**

Nearly 50% emissions abated by this lever at only 9.1% of the allocated abatement budget. Renewable power is 100% carbon-free, and studies have shown that it is possible to completely abate emissions by implementing this lever.

**Interventions:**

1. **Switch** to suppliers of renewable power (solar, wind, hydel, geothermal) with minimal long-run averaged costs**.** A multi-sectoral intervention and an overhaul of T&D (Transmission & Distribution) systems to reduce losses.
2. **Install** battery-storage systems as fail-safes, and associated maintenance, disposal and pollution concerns.
3. **Build** in-house production of power with Solar PV and wind-farms, nearshoring strategies to minimize T&D losses, electrification of products to renewable energies.
4. **Develop** supplier network, with a ranking system which incentivizes suppliers to self-align with Net-Zero targets.

**Case Study**

Factory 56, Mercedes-Benz plant in Sindelfingen, Germany, has set a new benchmark for companies attempting to become Net-Zero emitters. According to its slogan – ‘digital, flexible, green’, this plant is completely CO₂-neutral and with significantly reduced energy requirements. This is made possible, among other things, by its innovative energy concept with a photovoltaic system, a DC power grid and energy storage systems based on reused vehicle batteries. Innovative technologies and processes have been implemented consistently and comprehensively throughout the assembly hall, providing the best possible support for the employees in their daily work. The concept of Factory 56 will be gradually transferred to all Mercedes-Benz car plants around the world as a blueprint.

**1.2. Initiative: Material and process efficiency (40-55% abatement lever)**

Less material usage, efficiency in energy consumption, cutting T&D losses, abates 19% emissions at the source.

**Interventions:**

1. Al, Steel and battery cells production is CO2 intensive. Engage suppliers so that **carbon-neutral parts** supply becomes a primary requirement.
2. **Use old batteries** for storing of supplied renewable energy for long-term use.
3. **Deploy energy-saving tools** like co-generators to maximize efficiency.
4. **Procure greener fixtures and upholstery.** Use leather-alternates instead of natural leather (GHGs emissions from the cattle industry).
5. Push **for increased robustness** and efficacy of **Predictive Maintenance** and **Condition Monitoring** of supplier plant systems. Improve upon processes such as Planned Maintenance activity.
6. Establish **cross-industry standards** for **supplier process-control**, to ensure and rate suppliers based on carbon-neutrality. This is a **multi-sectoral** intervention.

**2. Emissions Source: Scope 1 Fast Cars Manufacturing Onsite Gas Boilers:**

Onsite boilers are used to produce steam for generating mechanical power, Heat & Chemical treatment and for pressure-cleaning. Traditional boilers use gas or diesel as fuels and are 2nd largest emission sources in the value-chain for Fast Cars.

**2.1.** **Initiative: Renewable Power in Production (40-55% abatement lever)**

Contributes to 50% abatement for this source, and is a cost-effective solution.

**Interventions:**

1. **Deploy** **renewable** electric power for steam generation.
2. **Replace** traditional fuel with biogas-methane for steam-generation.
3. For mechanical power generation, resort to renewable electric power.

**2.2. Initiative: Renewable Heat (40% abatement lever)**

**Interventions:**

1. Deploy renewable heat for steam generation.

[*Explain the intervention and what Fast Cars could do to implement it through their processes]*

Case Study

* *[Instruction: Include a case study from the resources on this intervention]*

**Next Steps**

*[Instruction: to finalise your email, provide a recommendation on the next step in the project]*

**Sources**:

* *[Instruction: list your sources here, website addresses or report titles will suffice.]*

**Overall outcomes:**

1. **64.89% of Scope 1 & 2 emissions are abatable** by implementing a mix of levers.
2. Abatement levers for **90% of all abatable Scope 1 & 2 emissions** are priced at***less than* €*10 /t CO2 e*.**
3. Abatement levers for **58.66%** Scope 1 & 2 emissionscost **only 25% of allocated budget** and are **highly mature.**
4. Abatement levers of **6.23%** Scope 1 & 2 emissionsare **expensive (> €100/t CO2 e) and less mature.** They cost nearly 75% of the allocated budget. Effectivity and cost-efficiency of these levers can only be achieved with scale and multi-sectoral interventions.