Impacts of Electric Vehicles on logistics Industry



DHL SUPPLY CHAIN THAILAND



OurWorldinData.org – Research and data to make progress against the world's largest problems. Source: Climate Watch, the World Resources Institute (2020). Licensed under CC-BY by the author Hannah Ritchie (2020).

Source: ourworldindata.org



ROAD TRANSPORT

- Significantly contributes to environmental pollution, not just through GHG emissions but black carbon and other particles
- Has a fair share in energy usage at the global level
- Without a major acceleration in clean energy innovation, reaching net zero emissions by 2050 will not be possible

CLIMATE CHANGE CONCERNS

ADATATION COSTS – DEVELOPING COUNTRIES a range of \$140 billion to \$300 billion per year by 2030, \$280 billion to \$500 billion annually by 2050.

Continuing with fossil fuels:

100 million people into poverty by 2030 and trigger major migrations (and possible conflicts)

DANGER!!!

50 Gt OF GHG EMISSIONS IN THE ATMOSPHERE EVERY YEAR

2 billion inhabitants have experienced flooding event

1.5 billion, drought



700 million, a damaging tropical storm





WHY ELECTRIC VEHICLES



Source: Microsoft integrated pptx

- Electric vehicles push the demand for renewable energy
- Contribute to lower GHG emissions, air pollution and noise
- Contribute to green job creation away from fossil fuels



Coal
Natural gas
Hydro
Wind, solar, etc.
Biofuels and waste
Oil

Source: International Energy Agency



ENERGY MARKET THAILAND



- The **Stated Policies Scenario** (**STEPS**), which reflects the countries' current policy settings based on a sector-by-sector assessment of the specific policies that are in place or have been announced.
- The **Sustainable Development Scenario** (**SDS**), which delivers on the Paris Agreement goal to limit the temperature to "well below 2°C", alongside the goals on energy access and air pollution. This scenario is consistent with Southeast Asia's current announced climate aspirations.
- The Net Zero Emissions by 2050 Scenario (NZE Scenario), which sets out a pathway for the energy sector to achieve net zero CO₂ emissions in 2050.

REPORTING METHODOLOGIES AT DHL GROUP







DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



SCIENCE

TARGETS

BASED

Source: GHG Protocol Methodology



EMISSION STRUCTURE



Subcontractors' scope 1+2 = % of our scope 3

IMPACT ON THE ECO-SYSTEM









GHG EMISSION TRANSPERANCY AT DHL SUPPLY CHAIN THAILAND



Electric Vehicles are on the rise

Sales of electric vehicles (EVs) doubled in 2021 from the previous year to a new record of 6.6 million

The success of EVs is being driven by multiple factors:

- Sustained policy support is the main pillar.
- Public spending on subsidies and incentives for EVs nearly doubled in 2021 to nearly USD 30 billion.
- A growing number of countries have pledged to phase out internal combustion engines or have ambitious vehicle electrification targets for the coming decades.



MAJOR BARRIERS





LIMITED RENEWABLE ENERGY SOURCES AND ACCESS TO CLEAN ELECTRICITY

Companies are not obliged to disclose the energy sources they use

LACK OF PUBLIC INFRASTRUCTURE ALONG THE MAIN DELIVERY CORRIDORS

1,000 EV charging stations across the country over 30,000 traditional gas stations (unknown electricity source)



TECHNOLOGY MARKET READINESS AND DURABILITY

High costs on imports, some local market not competitive



COMMERCIALIZATION IS DIFFICULT DUE TO THE HIGH INITIAL COSTS

Price still remains the major factor (and not the environment)



BENEFITS ARE GREATER



VALUE CHAIN BENEFITS





BRINGS BENEFITS TO THE ENTIRE VALUE CHAIN

Transport emissions are present in each and every phase from production to disposal



LOWERS NEGATIVE IMPACT ON THE ENVIRONMENT IF USED PROPERLY

In order to lower GHG emissions, electric vehicle must use renewable energy

GREEN JOBS CREATION ALONG THE VALUE CHAIN

- E-waste recycling to cut on raw material extraction
- Manufacturing of PV systems or batteries
- Engineering knowledge and future jobs (automation, robotics, analytics)





ELECTRIFICATION & AUTOMATION





EMISSION COMPARISON AND IMPACT

ENERGY SOURCE	DIESEL	ELECTRICITY FROM FOSSIL FUELS	ELECTRICITY FROM RENEWABLE ENERGY
CATEGORY	10 WHEELER	10 WHEELER	10 WHEELER
*AVG. ENERGY CONSUMPTION 100 km	(21 liter) 21*45.28= 950.88 MJ	(200 kWh) 200*12.78= 2,556 MJ	(200 kWh) 200*12.78= 2,556 MJ
EMISSION TYPE	WELL-TO-WHEEL (WTW)	WELL-TO-WHEEL (WTW)	WELL-TO-WHEEL (WTW)
EMISSION FACTOR (L/kWh)	3.111	0.543	0.000
TOTAL GHG EMISSION Kg CO2e	21*3.111=65.331	200*0.543=108.6	200*0.000=0.000

*Average consumption of the vehicle varies depending the category, type, engine and battery capacity, driving style, weather conditions and traffic conditions



TRANSPORT





WAREHOUSE



1) Variations & application due to size, geographical location, climatic conditions, operational & statutory requirements



Our Sustainability agenda is derived from who we are and what we do

The transportation sector is responsible for 16.2% of **global greenhouse gas** (GHG) emissions¹⁾

In 2020, our share of total sector emissions was 0.4% We are the 11th largest private employer globally We operate in 220 countries and territories worldwide

We are a diverse team of ~570,000 people



Our Sustainability Roadmap – Clean Operations Our **CO₂ footprint**

2020 emissions down to 27m tonnes

Largest exposure in **Scope 3** and by mode in **air transport**

Change of measurement to Well-to-Wheel (WtW)

- Measurement along the entire energy chain
- Covering all greenhouse gases
- Lifting 2020 base to **33m tonnes CO**₂

Continued industry growth expected

Based on expected business growth and current initiatives, our emissions would increase to an estimated **46m tonnes CO₂e by 2030**







Our Sustainability Roadmap – Clean Operations We will **reduce our greenhouse gas emissions** to under 29 million tonnes by 2030

We will invest **€7 billion until 2030 in Clean Operations (Opex and Capex)** to reduce our emissions to under 29m tonnes by 2030 and thereby commit to the Science Based Targets initiative









THANKYOU!

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GENERAL MANAGER SUSTAINABILITY DHL SUPPLY CHAIN THAILAND

