

Arguments for the Thai Government to get involved in EcoFoam Solutions

Introduction

Following the Paris Agreement (UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015) the government of Thailand has committed to reduce the greenhouse gas emissions (CO₂) with specified targets in 2030, carbon neutrality by 2050 and attain zero net emission by 2065. By 2030 the emission of greenhouse gas will reach the point of 555 Mio Tons (Mt) in a business as usual scenario (BAU). In addition the government of Thailand entered into the PAGE (Partnership for Action On Green Economy) initiative in 2019.

The majority of these emissions are caused by:

Energy sector:	73% of emissions (400 MtCO ₂ e)
Industrial sector:	15-20% (80–100 MtCO ₂ e)
Agriculture:	8-10% (45–55 MtCO ₂ e)
Waste management:	4-6% (20–30 MtCO ₂ e)

Given the business model of EcoFoam Solutions, we would be contributing primarily to the Waste Management part of the emissions, and indirectly to the energy sector.

Targets for reducing greenhouse gas emissions

The first specified target is to reduce greenhouse gas emissions by 20% in 2030. Which is based on the BAU volume in 2030, therefore 111 Mt in total. The waste management proportion would be around 5.5 Mt greenhouse gas reduction by 2030.

Impact of EcoFoam Solutions

EcoFoam Solutions is going to recycle and upcycle products containing polyurethane foam. Starting with mattresses which are now being discarded and ending up as landfill or being incinerated for the majority. In Thailand the estimated number of annually discarded mattresses would be around 2,5 – 3,0 Mio pieces and the amount of discarded sofas would reach around 700,000 pieces per year.

Given the growth path of EcoFoam Solutions and the amount of processing capacity, by 2030 would be have recycled around 2,4 Mio mattresses and 150,000 sofas. The impact of this would be a saving of 0.07 Mt of greenhouse gas and 342 Mio kWh electricity, The impact on the waste reduction target for Thailand will be 1.2%

Request to push mandatory EPR for bedding and furniture industry

To support this reduction of greenhouse gas emissions we would like to request the Thai government to push for a mandatory EPR scheme for both mattresses and sofa's (or furniture in general). In other words to make the manufacturing industry/mattress selling companies more responsible and thus supporting these recycling initiatives.

Rather than selling the products to the recycling industry, who then will utilize a small percentage (metal only) and continue to landfill or incinerate the rest materials, a circular supply chain model would actually ensure that a significant smaller portion would end up like this.

Mandatory EPR schemes for mattresses are already in place in Europe and other parts of the world and have proven to be very effective. By charging a relative small fee (around 200 THB) to the consumers, the brand owners collect this fee and put in a fund which then takes care of its distribution through a set of rules which are clearly favoring the circular supply chains above others.

Such funds are currently also in place in countries with EPR. The funding is being oversighted by industry associations, or alternatively it could be done by the Thai government.

Request to support funding initiatives

To support the start-up of this company we would like to request the Thai government to provide (partial) funding for the investments and work capital needed (110 Mio THB).

Appendix A.

Logic of number of mattresses discarded in Thailand

1. Hospitality Sector (Hotels, Resorts, Guesthouses)

Number of Accommodation Establishments:

According to the Tourism Authority of Thailand, there are approximately 32,000 registered accommodation establishments in the country, ranging from hotels and resorts to guesthouses and hostels.

Average Number of Rooms per Establishment:

Assuming an average of 30 rooms per establishment (some have more, others less), we get:

$$(32,000 \text{ establishments}) \times 30 \text{ rooms} = 960,000 \text{ rooms}.$$

Mattress Replacement Cycle:

Hotels typically replace mattresses every 5–7 years due to wear and guest expectations.

Assuming a 6 year replacement cycle, the annual mattress replacement would be:

$$\left(\frac{960,000 \text{ rooms}}{6 \text{ years}} \right) = 160,000 \text{ mattresses per year}.$$

2. Institutional Sector (Hospitals, Clinics, Other Facilities)

Number of Hospitals and Clinics:

Thailand has approximately 1,400 hospitals (both public and private) and numerous clinics.

Average Number of Beds per Hospital:

Assuming an average of 150 beds per hospital:

$$(1,400 \text{ hospitals}) \times 150 \text{ beds} = 210,000 \text{ beds}.$$

Mattress Replacement Cycle:

Hospitals often replace mattresses every 3–5 years due to hygiene standards.

Assuming a 4year replacement cycle, the annual mattress replacement would be:

$$\left(\frac{210,000 \text{ beds}}{4 \text{ years}}\right) = 52,500 \text{ mattresses per year}.$$

3. Other Institutions (Dormitories, Military Barracks, etc.)

Estimating Additional Institutional Beds:

Including university dormitories, military barracks, and other institutions, let's estimate an additional 100,000 beds.

Mattress Replacement Cycle:

Assuming a 7year replacement cycle:

$$\left(\frac{100,000 \text{ beds}}{7 \text{ years}}\right) \approx 14,300 \text{ mattresses per year}.$$

Revised Total Estimate of Mattresses Sold Annually

1. Household Mattresses:

Previously estimated at 2.3 to 2.8 million mattresses sold annually.

2. Hospitality Sector Mattresses:

Approximately 160,000 mattresses sold annually.

3. Hospital Mattresses:

Approximately 52,500 mattresses sold annually.

4. Other Institutional Mattresses:

Approximately 14,300 mattresses sold annually.

Total Mattresses Sold Annually:

Low Estimate:

$$(2,300,000 + 160,000 + 52,500 + 14,300 = 2,526,800 \text{ mattresses}).$$

High Estimate:

$$(2,800,000 + 160,000 + 52,500 + 14,300 = 3,026,800 \text{ mattresses}).$$

Adjusting the Number of Mattresses Discarded Annually

Given your logic that for every mattress sold, one is discarded, the number of mattresses discarded annually would align with the total number sold, which now includes the hospitality and institutional sectors.

Total Mattresses Discarded Annually:

Approximately 2.5 to 3 million mattresses per year, matching the revised sales estimates.

Conclusion

Does the Number of Mattresses Sold Include Hospitality and Institutional Sectors?

Initially: No, the earlier estimates primarily focused on household mattress sales.

After Adjustment: Yes, by including the hospitality and institutional sectors, we have a more comprehensive estimate.

Updated Estimates:

Total Mattresses Sold Annually: Approximately 2.5 to 3 million, including households, hospitality, and institutions.

Total Mattresses Discarded Annually: Assuming a one-to-one replacement, approximately 2.5 to 3 million mattresses are discarded annually.

Factors to Consider

Higher Turnover in Hospitality Sector:

Hotels and resorts may replace mattresses more frequently due to guest expectations and industry standards.

Institutional Demand:

Hospitals and other institutions have strict hygiene requirements leading to more frequent mattress replacements.

Secondary Markets and Disposal Practices:

Some discarded mattresses from these sectors may enter secondary markets or recycling programs, slightly affecting disposal numbers.

By including the hospitality and institutional sectors, the estimates now reflect a more accurate picture of mattress sales and disposals in Thailand. This adjustment supports the logic that for every mattress sold, one is discarded, bringing the discarded mattress figures in line with sales numbers.