MOVINN

Laundry, Textile Recycling & Cleaning Policy

Movinn A/S is committed to reducing the environmental impact of its serviced apartment operations, including laundry processes and textile lifecycle management. Laundry services are essential to guest satisfaction, and Movinn ensures that washing, drying, and textile handling are performed in an energy-efficient and responsible manner.

This policy outlines Movinn's approach to:

- Energy-efficient laundry operations
- Use of renewable electricity
- Monitoring CO_2 emissions per kg of laundry
- Recycling worn-out textiles

---

2. Energy-Efficient Laundry Operations

Movinn A/S operates Nortec commercial washing machines and tumble dryers with the highest available energy efficiency ratings.

Machine capacities:

- 15 kg units in washing machines
- 30 kg units in dryers.

All machines operate on electricity supplied under green energy contracts (Orsted Renewable Sources Certificate), supporting Movinn's climate commitments.

Laundry is typically washed at 60°C, ensuring hygiene standards while optimizing energy use through efficient equipment and full load utilization.

---

3. Electricity Use and CO_2 Emissions per kg Laundry

Movinn calculates emissions per kilogram of laundry (wash + dry) to monitor environmental performance.

Estimated Energy Use per kg (60°C Wash + Dry)

Process	Typical Energy Use (kWh/kg)	Notes
Washing at 60°C	~0.24 kWh/kg	Energy primarily used for water heating
Tumble drying	~0.12–0.20 kWh/kg	Depends on load size and spin efficiency
Total	~0.36–0.44 kWh/kg	Combined wash and dry cycle

CO_2 Emissions per kg Laundry

Movinn reports emissions using both market-based and location-based methods.

Reporting Method	Emissions Factor	CO_2 per kg Laundry
Market-based (Green electricity)	~0 kg CO_2e/kWh	~0 kg CO_2e/kg
Location-based (Danish residual mix)	~0.051 kg CO_2e/kWh	~18–22 g CO_2e/kg

By sourcing renewable electricity, Movinn significantly reduces operational emissions from laundry activities.

Movinn will continue improving data accuracy by collecting machine-specific energy consumption data where available.

---

4. Water Use and Detergents

Movinn recognizes that laundry sustainability also depends on responsible water use and chemical management.

Movinn aims to:

- Minimize water consumption through efficient machine use
- Avoid unnecessary rewashing
- Use detergents and cleaning products in correct dosages
- Prefer environmentally certified or low-impact products where feasible
- Ensure safe handling and storage of laundry chemicals

Movinn also acknowledges that wastewater treatment and detergent production contribute to indirect environmental impacts.

---

5. Textile Recycling and Waste Reduction

Movinn A/S is committed to minimizing textile waste and supporting circular economy principles.

Worn-out textiles such as:

- Bed linens
- Towels
- Cleaning cloths
- Textile-based guest materials

are separated from general waste streams.

Movinn ensures that:

- End-of-life textiles are sorted separately
- Textiles are sent to appropriate recycling or recovery channels where available
- Usable textiles are repurposed when possible
- Textile replacement cycles are monitored to avoid unnecessary disposal

All operational waste from warehouse and laundry facilities is sorted into designated categories and disposed of through municipal recycling systems.

---

6. Emissions Calculations from Laundry

Movinn A/S quantifies the environmental impact of laundry operations using a per-kilogram methodology. The calculation includes energy consumption, water use, and detergent lifecycle emissions associated with washing at 60°C and tumble drying.

The purpose of this approach is to ensure transparency, enable monitoring over time, and identify reduction opportunities.

6.1 Operational Assumptions

Laundry operations are conducted using:

- 15 kg commercial washing machines
- 60 kg commercial tumble dryers
- Electricity supplied under renewable contracts
- Standard 60°C wash programs

The calculation is based on typical high-efficiency commercial equipment performance and average operational conditions.

6.2 Energy Consumption per kg Linen (60°C + Dry)

Process	Estimated Consumption	Unit
Washing (60°C)	0.24	kWh/kg
Tumble Drying	0.20	kWh/kg
Total Electricity	**0.44**	**kWh/kg**

Electricity-related emissions are calculated using the Danish residual grid emission factor for conservative reporting.

6.3 CO_2 Emissions Calculation per kg Linen

Electricity Emissions

Parameter	Value
Total Electricity Use	0.44 kWh/kg
Emission Factor (DK residual mix)	0.051 kg CO_2e/kWh
Electricity Emissions	**0.022 kg CO_2e/kg (22 g)**

Water Consumption Impact

Typical commercial water consumption is approximately 10 liters per kg of laundry.

Parameter	Value
Water Use	10 liters/kg
Emission Factor (water supply + wastewater)	0.0004 kg CO_2e/liter
Water Emissions	**0.004 kg CO_2e/kg (4 g)**

Detergent (Soap) Lifecycle Impact

Average detergent use is approximately 12 grams per kg of laundry.

Parameter	Value
Detergent Use	0.012 kg/kg
Emission Factor (detergent lifecycle)	2.0 kg CO_2e/kg detergent
Detergent Emissions	**0.024 kg CO_2e/kg (24 g)**

6.4 Total Estimated Emissions per kg Linen

Source	CO_2 per kg Linen
Electricity	22 g
Water	4 g
Detergent	24 g
Total Estimated Impact	**~50 g CO_2e per kg linen**
Transferred into kg. CO2	0.05 kg CO_2e/kg

6.5 Reporting Approach

Movinn A/S reports laundry emissions transparently and recognizes that even with renewable electricity sourcing, lifecycle impacts remain due to upstream infrastructure, water treatment, and detergent production.

Movinn will continue to:

- Improve data accuracy through machine-level kWh monitoring
- Optimize load efficiency
- Reduce water intensity
- Evaluate lower-impact detergents
- Explore additional circular textile solutions

This calculation is reviewed annually as part of Movinn's ESG reporting framework.

7. Apartment Cleaning Detergents – CO_2 Impact Calculation

Movinn uses eco-labelled cleaning products in apartment operations, including:

- Calcium remover
- Universal cleaner
- Floor soap
- Glass polish

Cleaning detergents contribute to indirect (Scope 3) emissions primarily through product manufacturing, packaging, and distribution. Eco-labelled products typically reduce environmental impacts, but they still have lifecycle emissions.

7.1 Assumptions (Typical Use per Apartment Cleaning)

Product Type	Typical Dose per Cleaning
Calcium remover	~20 ml
Universal cleaner	~30 ml
Floor soap	~40 ml
Glass polish	~15 ml
Total detergent volume	**~105 ml**

105 ml ≈ 0.105 liters
Assuming density ~1 kg/L → 0.105 kg detergent per cleaning

7.2. Emission Factor (Eco-Labelled Products)

Typical lifecycle emissions for eco-labelled cleaning products are assumed at:

→ 1.5 kg CO_2e per kg product (conservative midpoint)

---

3. CO_2 per Apartment Cleaning (Detergents Only)

0.105 kg × 1.5 kg CO_2e/kg = 0.1575 kg CO_2e

→ ~0.158 kg CO_2e per apartment cleaning
(≈ 158 g CO_2e)

Policy Table – Cleaning Detergent Emissions (Per Cleaning)

Product	Typical Use per Cleaning	CO_2 Factor	CO_2 Impact
Calcium remover	0.020 kg	1.5 kg CO_2e/kg	0.030 kg (30 g)
Universal cleaner	0.030 kg	1.5 kg CO_2e/kg	0.045 kg (45 g)
Floor soap	0.040 kg	1.5 kg CO_2e/kg	0.060 kg (60 g)
Glass polish	0.015 kg	1.5 kg CO_2e/kg	0.0225 kg (22.5 g)
Total	**0.105 kg**	—	**0.1575 kg (≈158 g CO_2e)**

Movinn A/S monitors the environmental impact of apartment cleaning activities, including the use of cleaning detergents. These products contribute to indirect emissions through production, packaging, and transport.

Movinn uses eco-labelled products including calcium remover, universal cleaner, floor soap, and glass polish. Typical product use per apartment cleaning is approximately 105 ml in total.

Based on conservative lifecycle emission factors for eco-labelled products, Movinn estimates detergent-related emissions at:

~0.158 kg CO_2e per apartment cleaning (≈158 g)

Movinn seeks to reduce cleaning-related impacts through correct dosage, staff training, preference for eco-certified products, bulk purchasing where feasible, and continuous improvement of procurement standards.

8. Continuous Improvement

Movinn reviews laundry energy use and textile waste practices annually as part of its ESG framework. The company seeks to:

- Optimize load efficiency
- Maintain high-efficiency equipment
- Reduce textile waste volumes
- Strengthen recycling partnerships
- Continue to source eco-labelled products in cleaning events

This policy forms part of Movinn's broader environmental management approach and commitment to responsible operations.

Approved by,

Date: 1 Feb 2026
Signature:

Patrick Blok
CEO Movinn A/S