Annex A – Guide for Animation

(to the Nordic Ecological Standard, NES 1.1)

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Introduction and scope

The Nordic Ecological Standard (NES) is designed for all forms of film and television production, including scripted and non-scripted content, documentary and other production types. It also applies fully to animation in all its forms, including 2D and 3D computer animation, stop-motion, hybrid and visual effects (VFX) projects.

The main sources of greenhouse-gas emissions in animation — Travel and Transport, Energy Use, Use of Materials, and Accommodation and Catering — are largely the same as in live-action production. Therefore, the NES criteria remain valid without modification.

This annex does not introduce additional requirements. It provides guidance on how to apply the NES to animation and how to prioritise measures that have the greatest environmental impact within studio-based and digital workflows.

1. General Requirements

All general requirements in NES Section 1 apply equally to animation. The same obligations regarding management commitment, appointment of a Green Consultant, and GHG Emissions calculation before and after production remain valid.

For animation, additional emphasis should be placed on:
- including energy use for rendering, workstations and data storage in the GHG Emissions calculation
- engaging a Green Consultant familiar with both studio operations and digital workflows
- integrating sustainability early in pipeline and IT-infrastructure planning

2. Personnel and Material Transport

Although animation is often studio-based, travel and transport remain important emission sources. All NES requirements in Section 2 apply.

- Apply low-emission travel principles to workshops, recording sessions, meetings and festivals.
- Encourage remote collaboration and hybrid work to reduce travel.
- For stop-motion and hybrid animation, transport of physical sets and equipment should

follow NES Section 2 principles (low-emission vehicles, route optimisation, local sourcing).

3. Energy Use

Energy consumption is one of the most significant environmental aspects in animation. If green energy is not used, electricity becomes one of the primary emission sources, alongside travel and transport. When powered by green energy, total emissions from studio operations and rendering remain comparatively low. All requirements in NES Section 3 apply.

Green energy = renewable energy, fossil-free energy and/or ecolabelled energy (for example Bra Miljöval / Good Environmental Choice).

Key considerations:
- Use 100 % green energy throughout all phases of production.
- Optimise rendering workflows and scheduling to minimise idle computing.
- Review software configurations and disable unnecessary background processes or modules.
- Prefer cloud and render-farm providers that use certified green energy and disclose their carbon data.
- Prefer regional data centres powered by green energy for large inter-studio data transfers.
- Apply the principle of digital sobriety: avoid unnecessary rendering, iterations and storage; focus resources where they add creative value.
- If AI or machine-learning tools are used, monitor their energy consumption, prefer lightweight models and batch processing, and choose suppliers that provide energy and CO_2 transparency.
- Be aware of the rebound effect: greater efficiency can trigger higher output or complexity; set reasonable limits for render detail and data volume.
- Maintain efficient heating, cooling and ventilation; reuse server waste heat where feasible.
- Follow NES guidance on energy-efficient lighting and extend this principle to IT equipment and workstations.

4. Accommodation and Catering

All requirements in NES Section 4 are also relevant for animation productions. Studio-based work often involves meetings, recording sessions and occasional travel or overnight stays, which fall under the same sustainability criteria.

- Choose eco-labelled accommodation when travel is required (NES § 4.a).
- Apply NES § 4.b–§ 4.f for studio catering and meetings (plant-forward meals, reduced packaging, local and seasonal sourcing).

5. Use of Materials

The NES material section (Section 5) applies to both digital and physical animation workflows.

5.a–5.e Materials, purchasing and reuse
- For digital animation, “materials” include hardware and peripherals.
  • Prefer leased, modular or refurbished equipment.
- For stop-motion and hybrid animation, apply NES Section 5 in full: use recycled or sustainably sourced building materials (e.g. FSC/PEFC-certified wood) and non-toxic paints and adhesives etcetera.

5.f–5.h Sets, props, costumes and decorations
- For digital animation, interpret these as digital assets (models, rigs, textures, environments). Reuse existing assets and archive efficiently.
- For stop-motion, design physical sets, puppets and props for reuse and recycling, and avoid hard-to-recycle materials in line with the principles of Section 5.

5.j Waste management
- Follow NES § 5.j on waste separation and recycling, including electronic waste. Conduct regular clean-ups of shared servers and data drives to minimise storage-related energy use.

6. Biodiversity

In most animation productions, NES Section 6 is not directly applicable. However, for reference shooting, photogrammetry or texture capture in natural environments, the same requirements apply: avoid disturbing ecosystems and obtain permits as needed.

Conclusion and summary

The Nordic Ecological Standard provides a pragmatic and logical framework for all audiovisual productions, including animation. This annex confirms that animation projects should follow the same NES criteria while paying special attention to:

- energy sourcing and efficiency (Section 3)
- hardware and material lifecycle management (Section 5)
- digital asset reuse, pipeline optimisation and data hygiene (Section 5)
- early integration of sustainability in planning and pipeline design (Section 1)

A single, shared Nordic Ecological Standard for all types of audiovisual production offers clear administrative and operational advantages. It provides a unified framework for data collection, progress tracking and professional training; ensures consistency in updates and governance; and facilitates shared learning, innovation and measurable progress across the Nordic film and TV industry.