



ACKNOWLEDGEMENTS

Drawn to Change: A Climate Playbook for Canadian Animation

MADE POSSIBLE BY

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PRODUCTION STILLS

Thank you to the producers who contributed many production stills, which represent the breadth and depth of Canada's animation industry.

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KEY TOOLS IN THIS GUIDE

P4P Animation Carbon Calculator · Hardware Refresh Guide · One Studio, Many Actions infographic · Climate Storytelling for Animation Creatives · DGC Low-Carbon GenAI Toolkit

Roadmap

This guide is a practical tool for animators, producers and studios to understand the environmental impact of the Canadian animation industry, and access tools and resources to reduce the footprint and emissions of their production pipelines.



CHAPTER 1 INTRODUCTION

Sets the tone — Canada’s animation industry has a long legacy of purposeful storytelling — and asks producers to consider the role they want to play in protecting our natural world.



CHAPTER 2 CARBON IN CARTOONS

Explains the role of carbon emissions, carbon calculations, and how studios can begin to view their operational and production activities through an emissions lens.

KEY TOOLS: ANIMATION CARBON CALCULATOR · HARDWARE REFRESH GUIDE



CHAPTER 3 PRODUCTION PLAYBOOK

Pulls it all together in a practical producer playbook — how to include sustainability planning in your kick-off meetings, tips for each role of your team, and more.

KEY TOOL: ONE STUDIO, MANY ACTIONS INFOGRAPHIC



CHAPTER 4 GREEN TIPS

Breaks down the highest-impact actions department by department, from the art department to the render farm.



CHAPTER 5 WORLD- BUILDING

Covers content and creative — how the writers and world-builders of our industry can weave purposeful climate content into stories.

KEY TOOL: CLIMATE STORYTELLING FOR ANIMATION CREATIVES



CHAPTER 6 THE ROAD AHEAD

Reminds us to look out the window, to see the world and be inspired to protect it.



Image Credit

01

CHAPTER ONE

Introduction

Canada's animation industry has a long legacy of purposeful storytelling. This chapter asks producers to consider the role they want to play in protecting our natural world.

Made in Canada, Made Responsibly

Canadian animation has a rich history that has shaped how generations of audiences around the world understand themselves, each other, and the planet they're growing up on. That legacy of purposeful, artistically ambitious storytelling is exactly what this guide asks producers to carry forward, on screen and off.

Rendering a single animated feature can consume more than 100,000 kilowatt hours of electricity. A high-performance workstation can use 1,500 kilowatt hours each month. As production grows and AI increases computing demands, the environmental impact of animation is growing alongside the industry.

This guide starts with a simple premise: how we make animation is as important as what we put on screen. The choices Canadian producers make about how we make animation going forward will define this industry's environmental footprint for the next several decades.

“ How we make animation is as important as what we put on screen

So what now? We look to animation itself. Richard Condie's *The Big Snit* follows a couple distracted by Scrabble and petty squabbles while the world unravels outside their window.

This guide is for producers who are ready to look out the window.

The moment to get this right is now.

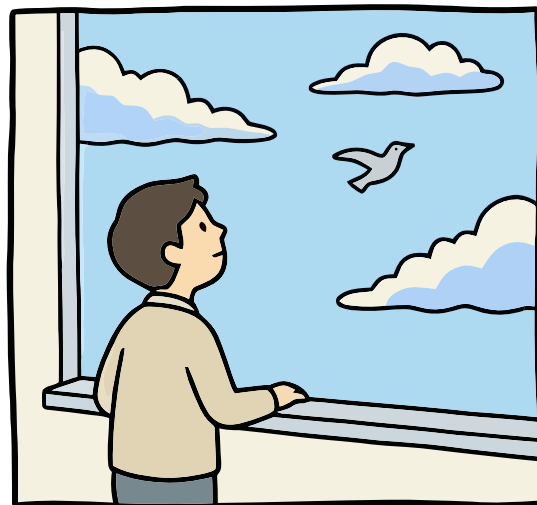


Image Credit

Who We Are

Canadian animation was built on the tradition of funny, anarchic and irresistible films that quietly made the argument that some things cannot be ignored no matter how hard you try. At the National Film Board, animators like Richard Condie, Frédéric Back, Evelyn Lambart, and Alison Snowden, among many others, spent decades proving that animation could be a vehicle for ideas as much as entertainment.

Back's *The Man Who Planted Trees* — the story of one man's quiet, persistent act of ecological restoration — won the Oscar for Best Animated Short in 1987 and feels more urgently relevant today than when it was made. Carolyn Leaf's *The Owl Who Married The Goose* brings to life an Inuit legend, stories which often centre animals and nature to convey important environmental and social themes.

**These were not films made to fill airtime.
They were made to say something.**

That same ambition carried into the television era and grew into something remarkable. From Toronto's Nelvana creating enduring children's IP enjoyed around the world, to *PAW Patrol*'s rescue dogs watched in over 160 countries, to Vancouver's Atomic Cartoons co-producing *Molly of Denali* — the first nationally distributed U.S. children's series to feature an Indigenous lead character, and a Peabody Award winner for its thoughtful storytelling. Canadian stories, voices, and perspectives have found global audiences.

This is who we are. Canadian animation is built on artistic ambition, cultural purpose, and global reach. It has long recognized that what we put on screen matters — for children and the young at heart.

Molly of Denali image - request pending

Image Credit

IN SHORT

Animation is never just animation.

The Business Case

Canadian animation — particularly children’s and youth content — has had a difficult few years. Production volume for children’s television animation dropped by more than half in 2023/24, from \$299 million to \$146 million for English-language animation alone. Small production companies and those working in the kids and animation sector were hit particularly hard by the broader industry downturn. When an industry is under that kind of pressure, sustainability can feel like a luxury.

That instinct is understandable, but wrong.

Three things are converging right now that make this moment different from any previous moment in Canadian animation — and waiting them out is not a strategy.

Source: Playback / Broadcast Dialogue

01 · CORE COMPETENCY

Federal and provincial funders are beginning to integrate sustainability into their requirements. Telefilm Canada and the Canada Media Fund are moving in this direction, and the trajectory is clear.

02 · CONDITIONS OF FUNDING

Sustainability credentials are becoming conditions of funding, not optional extras.

THE COST OF INACTION

Every production made without sustainability in mind is a missed opportunity to not only keep excess emissions from our air and waste from landfills, but also to build the workflow knowledge, the measurement data, the vendor relationships, and the industry credentials that will matter more with every passing year.

The Upsides Are Real

The business case for sustainability is about what sustainable practice actively delivers on both the business and creative side.

Saves money	Optimizing render pipelines, extending hardware lifecycles, reducing unnecessary iterations, powering down idle machines — these are efficiency gains that show up directly on the bottom line. The greenest production choice and the most cost-effective one are often the same.
Drives innovation	Studios that commit to sustainable workflows interrogate how they work — which processes are necessary, which are habitual, which can be redesigned. That discipline consistently produces better, leaner, more inventive pipelines.
Attracts and retains talent	The people in this industry care deeply about the values of the organizations they work for. A studio with a credible sustainability commitment is a more compelling place to work — and in a competitive talent market, that matters.
Builds the foundation for what comes next	AI tools, real-time engines, cloud infrastructure — the technologies reshaping animation production are also the technologies whose environmental costs are least understood and most rapidly growing. Studios that have already built sustainability into their decision-making are far better equipped to adopt new tools responsibly, evaluate vendors critically, and avoid locking themselves into high-emission infrastructure that will become a liability.
Is good for people	Greening our industry is better for the planet and the people who live on it. We all need clean air and water, available food, and healthy environments for ourselves and our families. These things may have been a guarantee for past generations, but not so for future ones.

The studios that will thrive in the next decade are those that have earned the trust of funders, partners, audiences, and workers by demonstrating that they take their responsibilities seriously — on screen and off.

Later Is Too Late

Being stewards of our planet is not only for activists, political parties, or workers with sustainability in their job title. Climate change and environmental degradation affects all of us, and so we are all on the hook to make change happen.

Our call to action is for everyone involved in producing and making animation to treat sustainability as a dimension of how you work — not as an add-on or something to be filed in a report and forgotten. The question is whether we make it now, while we still have the time to get it right — or later, when the window has closed.



Image Credit



Image Credit

02

CHAPTER TWO

The Carbon in Cartoons

Animation's environmental footprint is real, measurable, and growing — but it's not where most producers expect to find it.

Surprising Sources of Carbon

Understanding where your emissions actually come from is the first step to doing something about it. And the answer may surprise you.

Animation has always been a medium of imagination. What it has not always been is a medium that producers think of as energy-intensive. Unlike live action — with its trucks, generators, location catering, and physical sets — animation appears clean by comparison. No diesel. No location footprint. No mountains of physical waste. Just artists, computers, and light.

That perception is not entirely wrong. Animation does have a substantially lower physical footprint than live action production. But it has a digital footprint that is large, growing, and largely invisible to the people making the work. Understanding it is a prerequisite for doing anything about it.

WHERE ANIMATION'S EMISSIONS ACTUALLY COME FROM

Animation's carbon footprint is structurally different from almost every other creative industry. The emissions are not physical — they are computational. Every frame rendered, every asset processed, every file stored: these operations consume electricity. At scale, across hundreds of machines running for months, they add up to something significant.

5.5 t

CO₂ per hour of finished content, for the average animation production

84%

of those emissions are associated with energy use in production offices or home working

450,000 km

of driving — the rough equivalent of rendering one animated feature

Source: 2023 case study, Telefilm Canada and CMPA (BC), citing BAFTA albert data (2016)

The Numbers Are Real

A 2023 case study from Telefilm Canada and the CMPA (BC) — one of the first studies investigating animation emissions data — estimates that the average animation production generates approximately 5.5 tonnes of CO₂ per hour of finished content, citing BAFTA albert data (2016). The study also notes that roughly 84% of these emissions are associated with energy use in production offices or home working. Rendering alone can consume around 100,000 kilowatt-hours of electricity for a single animated feature, producing approximately 110 tonnes of CO₂. That is roughly equivalent to driving a car 450,000 kilometres.

The studio's office facility itself	~56 t
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Air travel — about 20% of the total	~71 t
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The data centre	~33 t
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Remote work set-ups introduce another consideration

A large portion of a studio's footprint comes from workstations and office space, and the addition of home office working adds another layer. Significant emissions are undoubtedly saved by removing the employee commute.

But other factors to consider include how many days per week employees are in office versus at home; their mode of transportation; whether they reduce their household utilities when they do go into the office; their household method of heating and cooling; whether the office powers down workstations when workers work from home, and whether employees are tying into their office servers and machines, or not. Therefore, calculating the emissions saved or increased by remote work is best done on a case by case basis.



The Footprint You Can't See

For many devices, the carbon emitted in manufacturing rivals or exceeds the carbon emitted during the device's entire working life. When a studio replaces hardware on a short cycle, it is not just incurring a financial cost. It is incurring a manufacturing carbon cost.

There is another dimension of animation's environmental footprint that rarely appears in producers' calculations: embodied carbon. Every workstation, every GPU, every server rack in a render farm required energy and resources to manufacture — mining of rare earth elements, fabrication processes, international shipping.

This matters particularly as demand for high-performance GPUs accelerates, driven by both AI and rendering workloads. Device replacement cycles are shortening. The embodied carbon implications are significant and largely untracked.

Carbon in the Pipeline

Within the production pipeline itself, emissions are not evenly distributed. They concentrate in a small number of high-impact stages — and understanding which stages those are is the foundation of any meaningful reduction strategy.

The most energy-intensive stages are those that require sustained, large-scale computation: 3D rendering and cloud computing, VFX simulations involving fluids, crowds, and destruction, and large-scale data centre processing. These are the stages where render farms — clusters of high-performance computers processing millions of frames — run continuously, often for weeks.

Artist workstations, data storage, and re-render cycles sit at the next tier of impact. A 3D modelling workstation draws significant power during active use, and a high-performance rendering workstation can consume approximately 1,500 kilowatt-hours per month. Even idle machines contribute: computers left in standby mode represent ongoing energy waste that adds up across a studio fleet.

At the lower end of the emissions spectrum sit 2D animation pipelines, pre-production work including storyboarding and design, and stop-motion production — which has lower compute demands but its own material footprint.

40%

of total electricity use in most data centres goes to cooling alone — a significant addition to the energy load of every render.

Emissions Distribution

Animation's carbon footprint is structurally uneven. A small number of compute-intensive stages account for the majority of emissions, meaning the most effective mitigation strategies focus on reducing unnecessary iteration, optimizing rendering workflows, and improving infrastructure efficiency rather than making incremental changes across all departments equally.

Very high emissions

3D rendering and cloud computing · VFX simulations (fluids, crowds, destruction) · Large-scale data centre processing

High emissions

Artist workstations (modelling, animation, rendering prep) · Data storage and file transfer systems · Re-render cycles and iterative revisions

Medium emissions

AI tools and inference (impact varies significantly by tool, scale, and data centre location — currently difficult to measure) · Office energy use (lighting, heating, cooling) · Motion capture and processing · Business travel and client collaboration

Lower emissions

2D animation pipelines · Pre-production (storyboarding and design) · Stop motion production (lower compute, higher material footprint)

OUTSIDE THE PIPELINE, BUT SIGNIFICANT

Hardware manufacturing and disposal (embodied carbon) often rivals lifetime operational emissions; not captured in standard production carbon accounting.

Source: Animation Production Sustainability, Telefilm

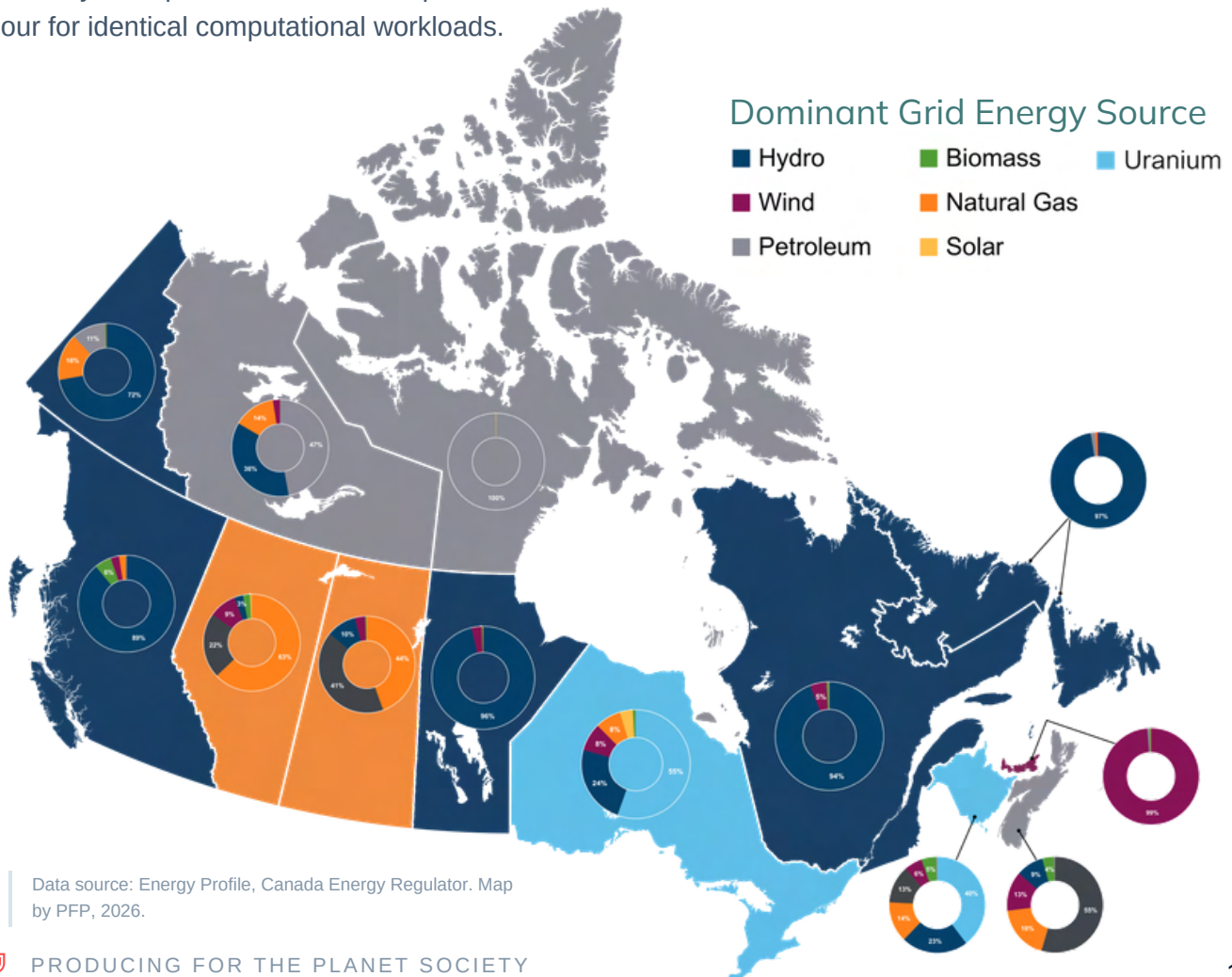
The Canadian Grid

Canadian animation studios operate in one of the most favourable electricity environments in the world for compute-intensive work. Nationally, approximately 80% of Canada's electricity comes from non-fossil fuel sources, with hydropower alone accounting for roughly 57–64% of total generation. But this advantage is unevenly distributed — and for animation studios, where your compute happens matters enormously. Quebec and British Columbia both operate grids that are approximately 95% hydroelectric, making them among the cleanest electricity environments in North America. Render farms and workstation-heavy production in these provinces have relatively low operational emissions per kilowatt-hour for identical computational workloads.

~95%

hydroelectric grids in both Quebec and British Columbia

For studios making decisions about cloud rendering, server location, or co-production infrastructure, this regional gradient is a core operational variable. A render job processed in Montreal produces a fraction of the emissions of the same job processed in a fossil-fuel-heavy data centre.



AI and Animation

Artificial intelligence tools are reshaping animation production faster than any previous technology shift — and they are reshaping its carbon footprint along with it.

The environmental promise of AI in animation is real. AI-assisted denoising and upscaling can significantly cut rendering time by producing high-quality images with fewer computational samples, directly reducing energy at the most intensive stage of production. AI tools for rigging, rotoscoping, and texture generation can reduce iteration cycles and rework. At the pipeline level, AI can optimize render farm scheduling, route workloads to lower-carbon infrastructure, and identify redundant data storage.

THE REBOUND EFFECT

When AI tools make tasks faster and cheaper — generating assets, iterating on shots, rendering previews — teams tend to do more of those tasks, not fewer. If rendering becomes faster, artists run more variations. If asset generation becomes easier, more assets get generated. The efficiency gain per task does not automatically translate into a reduction in total compute. It can just as easily translate into more total work.

TRAINING AND INFERENCE

A single large model training run can consume over 1,000 megawatt-hours of electricity before it is ever deployed to market — equal to the energy needed to power about 1,200 average Canadian homes for an entire year. The ongoing use of AI tools — inference, in technical terms — creates a continuous distributed energy demand across every team member who uses them. And unlike rendering, which is at least centralized and measurable, AI inference is often invisible in emissions accounting.

From a carbon emissions perspective, AI adoption simply redistributes a production's footprint — from local render farms to global data infrastructure — and potentially increases it if total compute grows faster than efficiency improves. Studios that adopt AI tools need to account for these energy implications in environmental reviews and reporting.

What Responsible AI Use Looks Like

The question for Canadian producers is not whether to use AI tools. It is how to use them in a way that captures the efficiency gains without triggering the rebound — and without obscuring the human and environmental costs. Some practical starting points:

- 01 Measure before you adopt.** Before adding a new AI tool to your pipeline, understand its energy footprint. The Directors Guild of Canada's Low-Carbon GenAI Toolkit — developed with digital sustainability agency Decarbonade and supported by Telefilm Canada — provides a practical carbon calculator specifically designed for screen industry AI use, using a Life Cycle Assessment methodology. It is free, bilingual, and built for Canadian productions.
- 02 Ask where it runs.** Not all AI tools are equal from an emissions perspective — and the difference is largely determined by where the computation happens. A tool running on servers in a hydro-powered Canadian data centre has a very different carbon footprint than the same tool running on fossil-fuel-heavy infrastructure elsewhere. Ask your AI vendors where their compute lives and what their energy sourcing looks like.
- 03 Watch the rebound.** Set intentional limits on iteration. The ease of AI-generated variations is not an invitation to generate unlimited versions. Establish production norms that capture the time savings of AI without multiplying total compute. Fewer renders, not just faster ones.
- 04 Protect the work that matters.** Identify the creative roles in your production where AI assistance genuinely adds value without displacing irreplaceable craft — and protect the roles where human authorship is the point. Not every efficiency gain is worth taking.
- 05 Track it.** AI use is currently the least measured part of most studios' environmental footprints. That is not a reason to avoid it — it is a reason to start measuring now, while the norms are still being established and while your baseline data will actually mean something.

TOOL · DGC LOW-CARBON GENAI TOOLKIT

A free, Canadian-made carbon calculator for generative AI tasks in screen production.
genaitoolkit.dgcgreen.ca

The Human Questions

The environmental and technical questions around AI cannot be separated from the human ones.

While AI has the potential to reduce render time, streamline workflows, and improve production efficiency, its adoption also raises important questions about the role of the artists, riggers, technical directors, and other creative professionals who have built Canada's animation industry over decades. A thriving workforce is part of what makes this sector worth sustaining.

As we all consider the future of these transformative technologies, thinking sustainably means being mindful of all impact dimensions — positive and negative. Sustainable practices open the door for us to consider the complex impacts on people and planet into our technology and creative conversations, ensuring that the choices we make today help enable a sustainable and fair industry for everyone.



Image credit

Measuring What Matters

Carbon accounting — “measuring your carbon footprint” — is a useful tool in the fight against climate change. Put simply, it is the quantification of the greenhouse gases emitted as a result of the organization’s operations, or a project’s production process.

In this Toolkit, you now have a made-in-Canada animation carbon calculator. This calculator takes into account the tension between animation studio vs production level footprints, and follows the internationally recognized methodology of the Greenhouse Gas Protocol.

You may have already measured a production footprint using BAFTA’s Albert calculator (UK), or the PEAR Calculator Sheet in the Green Production Guide from Sustainable Entertainment Alliance (US).

TOOL · ANIMATION CARBON CALCULATOR

A dedicated carbon calculator tailored to animation productions & pipelines.

[\[Link to tool here\]](#)

Studio vs Production Level Footprints

Animation studios often operate as year-round businesses, with multiple productions sharing the same staff, facilities, equipment, and energy use. Measuring the studio’s annual carbon footprint — at corporate level — is often more practical and accurate than attempting to calculate a separate footprint for each production.

However, many funders and broadcasters require emissions reporting at the production level. This creates a challenge: the data animation studios naturally collect is typically organized at the studio level, while reporting requirements are tied to individual projects.

Studio level footprints should include emissions from activities and assets that the studio directly owns or controls and that are required to deliver animation production services. Where facilities, equipment, or infrastructure are owned and managed by a parent company rather than the production entity, those emissions may be excluded from the production-level footprint, provided the exclusion is clearly documented.

When production level reporting is required, emissions can be estimated by allocating a proportion of the studio’s total annual emissions to the specific production. This allocation should reflect the production’s share of the studio’s overall activity during the reporting period.

There are two ways to allocate the production’s share:

Two Allocation Approaches

01 · FULL-TIME EQUIVALENT (FTE)

Calculate the proportion of studio staff assigned to the production relative to the total workforce across all active productions during the reporting period.

02 · TIME-BASED

Calculate the proportion of total labour hours or production hours attributable to the production relative to the studio's overall activity.

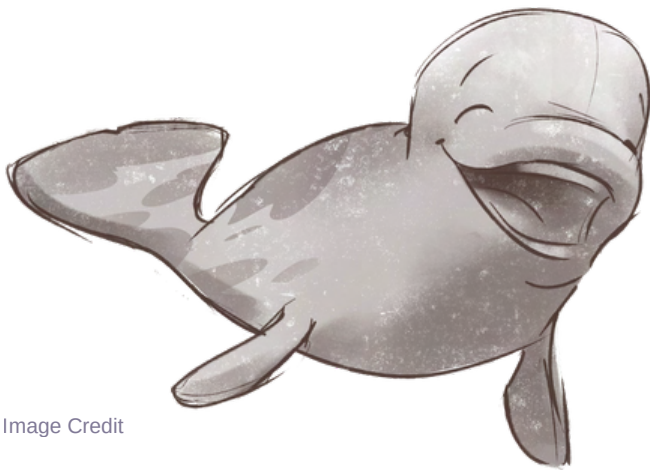


Image Credit

The resulting percentage is then applied to the studio's total emissions to estimate the production's footprint. This proportional allocation provides a fair and consistent method for assigning shared emissions, ensuring production-level reporting reflects actual resource use without requiring studios to measure each project independently.

The Greenhouse Gas Protocol

The Toolkit calculator was developed to closely align with the Greenhouse Gas Protocol (GHGP), a global standard for measuring carbon emissions, and divides them into three categories.

Scope 1

Direct emissions from owned sources, such as fuel used in vehicles or on-site generators.

Scope 2

Indirect emissions from purchased energy like electricity used in studios, workstations, and rendering infrastructure.

Scope 3

All other indirect emissions across the value chain, including cloud computing, data storage, travel, and purchased services — often the largest share in animation.



03

CHAPTER THREE

Your Production Playbook

Creating a more sustainable production isn't about adding another task. It's about challenging the defaults and replacing them with better ones.

Building a Sustainable Culture

Every studio has unwritten rules — the habits and assumptions that shape how decisions are made.

They're rarely documented, but they influence everything from workflows to budgets. Creating a more sustainable production isn't about adding another task; it's about challenging those defaults and replacing them with better ones.

The good news is that defaults change the same way they were created: through everyday decisions that gradually become the new normal. This chapter is organized by role because sustainable production is everyone's responsibility. Before exploring those roles, it's worth addressing the barriers that come up most often.

“We don't have time.”

Tight schedules and budgets make sustainability feel like extra work. In reality, most sustainable practices improve existing workflows rather than add new ones. Planning for asset reuse, optimizing render pipelines, or reducing unnecessary iterations often saves time and money over the course of a production. The key is to raise these questions during pre-production — not in a separate sustainability meeting, but alongside discussions about budgets, schedules, and pipelines. Building sustainability into existing planning processes is how new habits form.

“The client or budget won't allow it.”

Sometimes that's true, but it's often an assumption rather than a conversation. Many broadcasters, streamers, and funders now have sustainability commitments of their own and value production partners who can deliver efficiently. Even when creative or budget constraints limit certain choices, opportunities remain. Pipeline optimization, asset management, lighting, data storage, and production planning can all reduce emissions without affecting the creative brief. Asking about sustainability goals and reporting requirements early in the project often reveals more flexibility than expected.

“One production won't make a difference.”

No single production will solve climate change — but that's not the point. Every production that measures its footprint, improves a workflow, or normalizes sustainable decision-making helps build the industry standards, data, and expertise needed for broader change. Even a simple footprint estimate using tools like the P4P Animation Carbon Calculator provides a baseline for improvement. Measuring progress makes it possible to improve over time.

The Producer's Role

Sustainable production doesn't require a dedicated sustainability coordinator (although this can certainly help). It requires producers who ask different questions at the start of a project. Producers don't need to optimize render farms, design assets, or write AI policies themselves. Their role is to create the conditions for better decisions by asking the right questions, setting expectations, and empowering department leads to act. That's how sustainability becomes part of everyday production — not an extra initiative, but the default way of working.

Start here: the sustainable production kickoff

Add these questions to your standard production kickoff meeting. Not as a separate agenda item, but as part of the normal planning conversation.

PIPELINE Where are our biggest compute demands on this production, and have we planned for efficient rendering from the start?	ASSETS What are we building that could be reused — on this production and future ones?	AI Which AI tools are we using, and are we tracking their energy use?
REMOTE WORK Do we have a clear picture of where our team is working and what that means for our footprint?	MEASUREMENT Are we going to measure this production's footprint? If so, who owns that?	FIVE MINUTES EACH Ask them in the kickoff, not in a separate sustainability meeting.

None of these questions takes more than five minutes to answer. Together, they can change what gets planned for, what gets resourced, and makes tracking the production's environmental footprint easier.

Building the Green Team

“ Sustainability works when it’s distributed, not delegated.”

The producer’s job is to make the expectation clear from day one: every department lead is responsible for the sustainability performance of their own area. A sustainability coordinator — if you have one — helps them understand what that means, provides tools and data, and connects decisions across departments. But the animation supervisor owns the render efficiency of the animation department. The pipeline lead owns the data management footprint. The art director owns asset optimization. The coordinator connects the dots.

PRACTICALLY, THIS MEANS

- 01 **Name a sustainability coordinator or point person for every production** — someone whose job includes tracking footprint, running the kickoff sustainability conversation, and checking in with department leads at key production milestones. On smaller productions this may be the producer themselves.
- 02 **Give department leads specific briefs.** Don’t give everyone the same generic sustainability orientation. Give the lighting TD a brief about render optimization. Give the art director a brief about asset efficiency. Give the pipeline lead a brief about data management and hardware. Specific briefs create specific accountability.
- 03 **Make sustainability visible in production reporting.** If the weekly production report tracks schedule, budget, and creative milestones, it can also track a sustainability indicator — render hours, storage growth, revision cycles. What gets measured gets managed.

Outsourcing and the Supply Chain

All of these relationships have a carbon dimension — and under standard greenhouse gas accounting frameworks, they are your Scope 3 emissions. That means they count in your footprint whether or not you measure them, and increasingly funders and broadcasters who require carbon reporting will expect them to be addressed.

Canadian animation productions routinely work with partners outside the studio — and often outside Canada. Offshore animation studios in Indonesia, the Philippines, South Korea, and elsewhere handle significant portions of production work. International co-production partners contribute creative and technical labour across borders. Commercial render farms process frames on servers that may be located anywhere in the world.

Third-party vendors supply software, hardware, cloud storage, and specialist services. The practical challenge is real: you cannot mandate another studio's energy infrastructure, and you cannot control the grid their servers run on. But you can ask, communicate, and set expectations — and the industry is moving toward a baseline where these questions are normal parts of vendor and partner conversations.

THE HIGHEST-IMPACT QUESTION

Ask your render farm where its servers are located and what energy they run on.

A render farm running on hydro-powered Canadian infrastructure has a fundamentally different carbon profile than one running on fossil-fuel-heavy grids elsewhere. Make grid location part of your render farm selection criteria.



Image Credit

What to Ask, and of Whom

-
- 01 Ask your cloud provider which regions your data lives in.** Major providers — AWS, Azure, Google Cloud — operate data centres with very different carbon profiles depending on region. Canadian regions in BC, Quebec, and Ontario are among the cleanest available. Specifying low-carbon regions for storage and compute is a meaningful and actionable choice.
-
- 02 Include sustainability criteria in vendor selection.** You may not be able to mandate their energy infrastructure, but you can share your production's sustainability commitments, ask about their own practices, and signal that this is a dimension of the partnership you take seriously. The conversation normalizes the question and may surface practices and commitments you weren't aware of.
-
- 03 Make credentials part of the comparison.** When choosing between vendors — software providers, hardware suppliers, specialist services — make sustainability credentials one of the selection criteria alongside price, quality, and capability. Ask for environmental policies, energy sourcing information, and any existing certifications. Vendors who take this seriously will be able to answer. Those who can't are telling you something.
-
- 04 For international co-productions, address sustainability in the collaboration agreement.** If your co-production treaty or collaboration agreement sets expectations about credits, deliverables, and workflow, it can also set expectations about sustainability reporting. This is early-stage practice in the industry but it is coming, particularly as European co-production partners operate under increasingly stringent sustainability frameworks.
-
- 05 Account for Scope 3 in your carbon footprint measurement.** The P4P Animation Carbon Calculator and the Greenhouse Gas Protocol methodology both provide frameworks for estimating Scope 3 emissions from outsourced activity. Even rough estimates — based on the volume of work outsourced and the known grid emissions of the partner location — are more useful than treating outsourced work as invisible in your footprint.
-

Where the Decisions Land

The playbook comes down to three habits: ask the questions early, give every lead a specific brief, and measure enough to know whether it worked.

PRE-PRODUCTION

Run the kickoff questions. Set revision limits, asset reuse plans, and render quality tiers before any compute-intensive work begins.

PRODUCTION

Track one sustainability indicator in the weekly report. Check in with department leads at milestones.

WRAP

Close out the footprint measurement, record what changed, and carry the asset library and vendor knowledge into the next production.

KEY TOOL

The next chapter is visualized in our **One Studio, Many Actions** infographic — green roles by department, on a single page.



Image Credit



Image Credit

04

CHAPTER FOUR

Green Tips, By Department

Sustainability is not a separate workflow. It lives inside the decisions each department makes every day.

One Studio, Many Actions

Every department in an animation production has a direct relationship with energy, compute, and resources.

Sustainability is not a separate workstream — it lives inside the decisions each department makes every day. This section breaks down where those decisions sit, and what the highest-impact actions are for each role. The section is also visualized in our One Studio, Many Actions infographic.

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Production & Management

The producer has more influence over a production's carbon footprint than any other role — not by doing green tasks, but by shaping how the production is planned and managed. The highest-leverage decisions happen during pre-production, before compute-intensive work begins.

-
- 01 **Design for fewer revisions.** Every unnecessary asset, revision cycle, and re-render has an energy cost. Build realistic review milestones and revision limits into schedules, briefs, and contracts.
 - 02 **Plan for asset reuse.** Develop reusable asset libraries, naming conventions, and file management systems from the outset to reduce duplicate work across future productions.
 - 03 **Choose sustainable technical partners.** Ask render farms, cloud providers, and key vendors about their renewable energy sourcing, energy efficiency, and environmental commitments when selecting suppliers.
 - 04 **Schedule compute strategically.** Work with pipeline leads to schedule rendering and simulation workloads efficiently and, where possible, on lower-carbon infrastructure.
 - 05 **Measure your footprint.** Use the P4P Animation Carbon Calculator to establish a baseline and identify opportunities for improvement throughout production.
-

THE TAKEAWAY

The decisions made before a frame is rendered determine most of the production's environmental footprint. Scope, schedule, and pipeline architecture are sustainability decisions.

Studio Operations

Operational decisions shape a studio's ongoing environmental impact, regardless of the projects underway.

-
- 01 **Improve office energy efficiency.** Use LED lighting, automated equipment shutdowns, and ENERGY STAR® certified equipment to reduce everyday energy consumption.
 - 02 **Support sustainable hybrid work.** The CMPA case study found home heating to be the largest emissions source for one Vancouver animation studio. Help remote staff reduce home office energy use by sharing information on energy efficiency, rebates, and power management.
 - 03 **Reduce business travel.** Prioritize virtual collaboration where appropriate. When travel is necessary, favour direct flights, economy class, and lower-emission transportation options.
 - 04 **Manage waste responsibly.** Provide clearly labelled recycling, organics, landfill, battery, and e-waste collection, and ensure electronics are recycled through certified programs.
 - 05 **Purchase sustainably.** Consider environmental criteria when buying office equipment, catering, furniture, and supplies, including recycled content, local sourcing, durability, and minimal packaging.
-

THE TAKEAWAY

Physical operations still matter. Office energy, hardware procurement, commuting, and waste management all contribute to the studio's total footprint — and all are within the studio's control.

Cross-Department Opportunities

Many of the biggest opportunities require collaboration across creative, technical, and production teams rather than action by any one department.

01 · STANDARDIZE WORKFLOWS

Consistent pipelines, naming conventions, and asset management reduce rework, troubleshooting, and unnecessary compute across productions.

02 · BUILD IT INTO TEAM CULTURE

Include sustainability in onboarding, production planning, and professional development so every department understands how its decisions affect the production's footprint. Ontario Green Screen, Reel Green, and Producing for the Planet all offer free tools and training.

03 · TRACK PROGRESS OVER TIME

Monitoring emissions across productions helps studios identify trends, set targets, and demonstrate progress to funders, broadcasters, and partners.

04 · WATCH FOR THE REBOUND EFFECT

Faster rendering and more efficient tools only reduce emissions if they result in less work overall — not simply more iterations or larger workloads. Track total compute alongside efficiency gains to ensure improvements translate into real reductions.

THE TAKEAWAY

The most impactful sustainability strategies cut across all departments. Reducing total compute — not just improving efficiency per task — is the goal.

Story, Editorial & Previsualization

Story and editorial decisions made early in production have compounding effects downstream. A shot that gets cut in previs costs nothing to render. The same shot cut after the final render costs everything.

-
- 01 **Invest in previs.** Thorough previsualization reduces the number of surprises that generate costly late-stage revisions. Proxy media and low-resolution stand-ins allow creative decisions to be made without triggering full-quality render cycles.

 - 02 **Practice disciplined version control.** Unnecessary versions of sequences, cuts, and assets accumulate storage costs and create confusion that generates re-work. Establish clear naming conventions and version management protocols from day one.

 - 03 **Catch problems early.** A story problem identified at script stage costs a conversation. The same problem identified at composite costs weeks of rework across multiple departments. Editorial should be actively involved in identifying potential rework risk as early as possible.

 - 04 **Use proxy media aggressively.** Working with full-resolution assets for editorial decisions that don't require them wastes storage and compute. Establish clear protocols for when full-resolution assets are actually needed.
-

THE TAKEAWAY

Every avoided shot or revision eliminates downstream energy use. The most sustainable frame is the one that never needs to be rendered twice.

Art Department

Asset creation choices made in the art department ripple through every subsequent stage of production. The lightest asset that achieves the creative result is always the right asset.

-
- 01 **Right-size texture resolution.** Texture maps larger than the production output resolution waste memory and increase render times without improving visible quality. Establish clear texture resolution standards at the start of production and enforce them consistently.
 - 02 **Build reusable asset libraries.** Assets designed for reuse — with consistent naming, clean topology, and modular construction — reduce duplication across episodes and productions. Invest the time upfront; it pays back across every subsequent production that draws from the library.
 - 03 **Use compression deliberately.** Appropriate compression of textures and assets reduces storage and data transfer demands significantly. Establish compression standards that balance quality requirements against file size.
 - 04 **Control AI asset generation.** AI tools for texture and asset generation can accelerate production — and can also generate enormous quantities of unused or duplicate assets. Set clear production norms for AI-generated asset use: what gets generated, by whom, and what gets kept.
-

THE TAKEAWAY

Overbuilt assets create compounding costs across the entire pipeline. Every unnecessary polygon, every oversized texture, every duplicated asset gets paid for in render time.

Modeling, Rigging & Layout

Geometry complexity and rig design are among the most direct technical determinants of render time and energy use. The modeler and rigger who think about downstream efficiency are doing sustainability work, whether or not they frame it that way.

-
- 01 **Reduce polygon counts intentionally.** Use the minimum geometry that achieves the required visual quality at the required output resolution. Establish LOD (Level of Detail) standards that match polygon density to actual production needs.

 - 02 **Use instancing instead of duplication.** Instanced geometry consumes a fraction of the memory and render resources of duplicated geometry. Establish this as a default workflow practice rather than an afterthought.

 - 03 **Design lightweight rigs.** Complex rigs with unnecessary controls slow simulation and playback across the pipeline. Rigs should be designed for the performance required — not for every possible performance.

 - 04 **Reuse and share rigs across characters and productions.** Modular rig components that can be shared across characters reduce both build time and the compute associated with re-rigging similar character types.

 - 05 **Layout efficiency matters.** Scene assembly choices — how assets are organized, referenced, and loaded — directly affect playback performance and render times. Layout artists should be briefed on efficiency standards at the start of production.
-

THE TAKEAWAY

Lighter scenes translate directly into lower energy consumption. Polygon count is an environmental variable, not just a technical one.

Lighting & Rendering

Lighting and rendering sit at the intersection of creative quality and computational intensity. The lighting TD and render wrangler who understand sustainability are among the most valuable people on a green production.

-
- 01 **Use AI denoising.** AI-based denoising allows high-quality renders to be produced with significantly fewer samples, reducing render times substantially. This is one of the clearest cases where AI adoption directly reduces emissions without triggering rebound — the creative result is equivalent, the compute is lower.
 - 02 **Optimize lighting setups before final render.** Complex lighting with unnecessary lights, excessive bounces, or unoptimized sampling settings multiplies render time without proportional quality gain. Lighting review should include a technical efficiency check before shots go to final render.
 - 03 **Minimize test render quality.** Full-quality test renders are one of the most common sources of wasted compute in production. Establish clear render quality tiers — low-res for blocking approval, medium for lighting review, full-quality only for final output — and enforce them consistently.
 - 04 **Manage the render farm actively.** Idle render nodes, inefficient job queuing, and poor load balancing waste significant compute. Render wranglers should be empowered to optimize farm utilization, not just submit jobs.
 - 05 **Choose render infrastructure based on grid emissions.** Where your render jobs run determines a significant portion of their carbon footprint. Prioritize render farms and cloud regions in low-carbon grid locations — BC, Quebec, and Ontario within Canada; renewable-powered regions for cloud infrastructure. Ask your render farm provider for their energy sourcing information.
-

THE TAKEAWAY

Rendering optimization offers the largest single opportunity for emissions reduction in the pipeline. This is where the environmental argument is most technical and most impactful.

FX & Simulation

FX and simulation are among the most compute-intensive stages in a 3D pipeline, and also among the most prone to unnecessary recomputation when upstream changes aren't managed carefully.

-
- 01 **Cache simulations aggressively.** Recomputing simulations that have already been approved is one of the most wasteful sources of compute in production. Establish clear cache management protocols — what gets cached, at what stage, and what triggers a required recompute versus what can be managed with existing cache.
 - 02 **Reduce simulation resolution where possible.** Not every simulation needs to run at full resolution. Establish resolution standards that match simulation quality to actual output requirements — hero elements at full resolution, background elements at reduced resolution where the difference is not visible.
 - 03 **Plan simulation dependencies carefully.** Simulations that depend on upstream elements are vulnerable to late-stage changes that require full recomputation. Identify simulation dependencies early and protect them in the production schedule.
 - 04 **Avoid unnecessary complexity.** The most realistic fluid or crowd simulation that the shot actually needs is the right simulation. Complexity beyond what is visible at output resolution wastes compute without improving the work.
-

THE TAKEAWAY

Simulation work can rival rendering in computational intensity. Avoiding unnecessary recomputation is the primary efficiency lever.

Compositing & Post-Production

Compositing is generally less compute-intensive than rendering and simulation, but it sits at the end of the pipeline where the accumulated costs of upstream inefficiency become visible and expensive.

-
- 01 **Optimize node structures.** Compositing trees that are unnecessarily complex — with redundant operations, inefficient branching, or unoptimized processing order — slow render times without improving output quality. Regular node tree reviews are worth the investment.

 - 02 **Manage file formats and codecs deliberately.** The choice of intermediate file formats significantly affects both storage requirements and processing time. Establish clear standards for which formats are used at which stages of the pipeline.

 - 03 **Coordinate with upstream departments early.** The most expensive compositing work is rework caused by upstream changes — a lighting revision, a new render pass, a changed asset. Compositing supervisors should be involved in production planning conversations, not just at the point of delivery.

 - 04 **Audit render passes.** Productions regularly render passes that are never used in final composite. A pre-production audit of required render passes — and a regular review during production — can significantly reduce wasted compute.
-

THE TAKEAWAY

Efficiency in post depends on avoiding rework from earlier stages. Compositing's environmental footprint is largely determined by what arrives from upstream.

Pipeline & IT Infrastructure

Pipeline and IT sit across the entire production — their decisions affect every other role's environmental footprint, often invisibly. This is a role with significant sustainability leverage that is rarely framed that way.

-
- 01 **Implement tiered storage.** Not all data needs to live on high-performance, energy-intensive storage. Active project data belongs on fast storage; completed project data belongs on archival storage; obsolete data should be deleted. Establish and enforce a data lifecycle policy.
 - 02 **Delete unused assets and duplicates.** Studios accumulate enormous quantities of redundant data — duplicate assets, unused renders, outdated versions. Regular storage audits and clear deletion policies can significantly reduce storage-related emissions.
 - 03 **Power down idle machines.** Workstations and render nodes left running overnight and on weekends consume significant energy for no productive output. Remote device management tools — like NinjaOne, used by Kickstart Studios — allow IT teams to power down and wake devices remotely without disrupting workflows.
 - 04 **Right-size hardware procurement.** Studios frequently overprovision high-performance machines for roles that don't require them. Match hardware specifications to actual role requirements — reserve high-performance machines for rendering and simulation, use lower-power devices for administrative and lighter creative work.
-

THE TAKEAWAY

Storage and data management are often overlooked but significant sources of emissions. The pipeline team has direct control over some of the most impactful efficiency levers in the studio.

Hardware Over Its Lifetime

The carbon in a workstation is spent before it is switched on. Procurement, maintenance and disposal decisions are where the pipeline team meets embodied carbon.

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- 05 **Extend hardware lifecycles.** The embodied carbon in manufacturing a new workstation is significant. Extend hardware life through RAM and SSD upgrades, regular maintenance, and reassignment of older machines to lower-intensity roles rather than replacement.
-
- 06 **Certify e-waste recycling.** Partner with certified e-waste recyclers — R2 or e-Stewards certified — for end-of-life hardware disposal. Uncertified recycling or landfill disposal of electronic equipment releases hazardous materials and loses valuable recoverable materials.
-
- 07 **Track performance per watt.** When evaluating hardware, measure output per watt rather than raw performance. A machine that renders faster but draws significantly more power may have a worse performance-per-watt profile than a more modest alternative.
-

KEY TOOL

Our **Hardware Refresh Guide** sets out when to upgrade, when to reassign, and when replacement is genuinely the lower-carbon choice.

OPTIONAL IMAGE — landscape band. Workstations, hardware, or studio floor.

Image credit: [Title] © [Studio / rights holder], [year]. Used with permission.

Rendering & Cloud Infrastructure

The render farm — whether on-premise, cloud-based, or hybrid — represents the largest concentration of energy use in an animation pipeline. The decisions made about render infrastructure have more environmental impact than almost any other technical choice in the studio.

-
- 01 Choose infrastructure based on grid emissions.** BC and Quebec offer some of the cleanest electricity in North America for on-premise or locally hosted render infrastructure. For cloud rendering, major providers — AWS, Azure, Google Cloud — operate data centres in Canadian regions powered by clean hydro. Match your compute location to the cleanest available grid.
-
- 02 Ask render farm providers for their energy sourcing.** Commercial render farms vary significantly in their sustainability commitments and energy sourcing transparency. Make this part of your vendor selection criteria. Some farms offer carbon-neutral or renewable-powered options — understand what those claims actually mean before relying on them.
-
- 03 Enable autoscaling.** Cloud render infrastructure that scales to demand — spinning up nodes when needed and releasing them when not — avoids the energy waste of idle capacity. Work with your cloud provider to implement autoscaling rather than maintaining a fixed, always-on node count.
-
- 04 Schedule jobs for lower-carbon periods.** Electricity grid carbon intensity varies by time of day and season. Tools like Electricity Maps allow studios to schedule non-urgent render jobs during periods of lower grid emissions — overnight when renewable generation is proportionally higher, for example.
-

THE TAKEAWAY

Where and when computing happens is as important as how much is used. The render farm is the single highest-impact infrastructure decision a studio makes.

Transfer, Cooling and Reporting

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- 05 Minimize data transfer.** Transferring large files between storage locations and render infrastructure consumes energy in networks and data centres. Minimize unnecessary data movement through efficient pipeline architecture, local caching, and proximity of storage to compute.
-
- 06 Ask about cooling technology.** Cooling accounts for nearly 40% of total data centre energy consumption, making it one of the highest-impact efficiency variables in render infrastructure. Immersion cooling — where servers are submerged in non-conductive liquid rather than cooled by air — reduces data centre energy consumption by approximately 50% compared to conventional air cooling, according to peer-reviewed research published in Energy Informatics. When evaluating render farm providers, ask what cooling technology they use. It is a meaningful differentiator.
-
- 07 Monitor and report render farm emissions.** The render farm's energy use should be tracked and reported as part of the production's carbon footprint. Work with your render farm provider to obtain energy consumption data, and apply the appropriate regional grid emissions factor to calculate your rendering footprint.
-

~40%

of total data centre energy consumption goes to cooling

~50%

reduction in data centre energy consumption from immersion cooling versus conventional air cooling

Source: peer-reviewed research published in Energy Informatics



05

CHAPTER FIVE

World-Building for World-Saving

Animation has a unique power to make environmental issues visible, emotional, and understandable — especially for children.

Climate Content 101

The realities of the world around us should be reflected in age-appropriate ways, in our story, characters, and world design, from the outset.

-
- 01 **Integrate environmental themes early in development.** Embed sustainability into story, characters, and world design from the outset, rather than adding it later.
 - 02 **Leverage character-driven storytelling to influence behaviour.** Use relatable characters and narratives to model environmentally positive actions and build early climate awareness.
 - 03 **Embed subtle “green nudges” in world design.** Incorporate background elements (e.g., recycling, sustainable habits, ecosystem details) to normalize environmental behaviour without requiring explicit messaging.
 - 04 **Frame sustainability as a worldbuilding and quality enhancement.** Position environmental details as improving realism, immersion, and visual depth, making them more appealing to clients focused on production value.
 - 05 **Focus on low-impact, high-influence production choices.** Introduce environmental elements through flexible areas like layout, lighting, and background design, and offer scalable integration options to fit tight timelines and client constraints.
-

KEY TOOL

Our tipsheet, **Climate Storytelling for Animation Creatives**, lists the questions worth asking early — in development, in the writers’ room, in the design phase — before the world is locked and the opportunity has passed.

Children and Youth Audiences

Animation can do something no other medium can. Unbound by physical reality, it can put a child inside a melting glacier, give a forest its own interior life, and make the abstract challenge of climate change visible, tangible, and emotionally real.

That matters because children are not passive audiences — they are developing their understanding of how the world works, what is worth caring about, and what kind of future is possible.

For a generation growing up with climate anxiety as a backdrop to daily life, animation has a unique opportunity to shape not only awareness, but hope and agency.



| Image Credit

What the Research Says

Another study from the *Journal of Children and Media* found that watching a single episode of the PBS Kids animated series *Nature Cat* shifted children's emotional relationship with the natural world, making them significantly more concerned about environmental issues.

Research shows that environmental storytelling can have a lasting impact. A peer-reviewed study published in *The Journal of Environmental Education* found that watching *WALL-E* measurably improved children's understanding of the relationship between human behaviour and the natural world.

These findings tell us that stories about the environment reach children at a deep level, and it underscores that how we tell these stories matters enormously. Content that raises alarm without offering agency, understanding, or hope risks leaving young viewers more anxious and less equipped.

“

In English, we never say ‘who’ for a tree.
I’d like to change that.

Robin Wall Kimmerer

Botanist · Member of the Citizen Potawatomi Nation *Braiding Sweetgrass*

The Children's Media Gap on Climate

Despite this potential, climate remains largely absent from children's media. In 2022, the Aspen Institute's This Is Planet Ed initiative reviewed 664 episodes of educational and nature-themed children's television and found only nine with any direct reference to climate change — just 1.4% of those reviewed. None of the twenty most popular family films of 2021 featured climate-related themes.

Yet demand exists. An NPR poll found that 84% of parents believe children should learn about climate change, while only 45% have had that conversation with their children. Children's media can help bridge that gap by providing an engaging starting point for families.

The Aspen Institute identified *Molly of Denali* as one example of climate storytelling done well. The Peabody Award-winning series, co-produced by Vancouver's Atomic Cartoons, was recognized for its age-appropriate, solutions-focused approach, connecting children to the environment through Indigenous knowledge and lived experience rather than fear.

The opportunity for producers is significant. By weaving environmental themes naturally into the worlds they create — not as lessons, but as part of compelling stories — they can inspire curiosity, connection, and optimism while creating content that resonates with children, families, and the realities of the world they are inheriting.

1.4%

of 664 children's episodes reviewed made any direct reference to climate change

84%

of parents believe children should learn about climate change

45%

have had that conversation with their children

Climate Content Across the Ages

Research tells us that children who encounter climate content without a sense of agency or resolution can come away more worried and less equipped, while adults generally respond better to stories that emphasize relevance, solutions, and collective action.

PRESCHOOL · 2–5

Wonder before worry

Young children aren't ready for climate facts, they are ready for building relationships with the natural world. Stories that inspire curiosity about forests, animals, seasons, or outdoor play help build lifelong environmental values. *Bluey* illustrates this approach, making nature — backyards, insects, mud — feel joyful and worth exploring without ever mentioning climate change. **TO FILL — Bluey producer and network**

EARLY ELEMENTARY · 6–8

Agency before alarm

As children begin to understand cause and effect, they also need to see what they — and the characters they admire — can do. Keep it concrete, keep it local, and keep the emotional register hopeful. *Molly of Denali* is the model here: connecting its young protagonist to a vivid, living landscape, showing that paying attention, caring, and taking action are all important and within a child's reach. Molly notices the world around her. She acts within it. She belongs to it. A child watching learns, almost without realizing it, that the natural world is worth knowing and worth protecting.

Older Audiences

MIDDLE GRADES · 9–12

Complexity before catastrophe

This is where the conversation can open up. Children at this age are developing abstract thinking, civic awareness, and genuine scientific curiosity. They are also, increasingly, already anxious about climate change — they've heard about it, thought about it, and formed feelings about it. Older children are ready for bigger conversations. They can engage with systems thinking, civic awareness, environmental justice, and collective action, but still need stories that show challenges are solvable. Rather than shielding them from difficult realities, help them understand where they fit within them.

TEENS · 13+

Honesty before hope

The teen bracket is where you stop protecting and start respecting. The research is clear — teens are already informed, concerned, furious, and deeply attuned to condescension. They don't need environmental issues simplified or moralized. They respond best to honest, nuanced stories that acknowledge uncertainty while connecting people to action, community, and meaningful change.

ADULTS

Recognition before persuasion

Unlike children's programming, adult animation is rarely designed to teach specific lessons. Its strength lies in reflecting the complexity, humour, contradictions, and lived experiences of adult life.

Adult Animation

With adult audiences, the goal is not to persuade through messaging, but to tell compelling stories that reflect the realities of a changing world while leaving room for hope, humour, and imagination.

That might be a family navigating rising food costs brought on by drought and tough growing conditions, neighbours rebuilding after a flood, a farmer adapting to changing seasons, coworkers debating an office sustainability initiative, or friends sharing their experiences of switching to electric vehicles. Environmental issues to familiar relationships, identities, and everyday experiences than by information alone.

Rather than positioning climate as the subject of the story, creators can weave it naturally into characters, settings, workplaces, and communities — making environmental change feel like part of the world audiences already recognize.

A family navigating rising food costs brought on by drought

Neighbours rebuilding after a flood

A farmer adapting to changing seasons

Coworkers debating an office sustainability initiative

Friends sharing their experiences of switching to electric vehicles

Climate as part of the world, not the subject of the story

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Buyers and Clients

Climate is not a genre. It's the condition under which all stories now exist.

That means your content can reflect the environment without being about the environment. Whether you're developing your own IP or executing someone else's, there is a conversation to be had about environmental storytelling — and it's a creative conversation, not a compliance one.

Producers who bring this thinking early, framed around authenticity and audience relevance, will find more openness than they expect.

ORIGINAL IP

When you control the creative from the ground up — the characters, world, tone, and story arcs — environmental authenticity isn't something you negotiate with a buyer. It's something you build in from the earliest development conversations because it strengthens the project creatively.

The pitch isn't "this show has a sustainability message." It's: "This world feels real because it reflects the world children are actually growing up in." That's both a creative and market advantage. A world that acknowledges the environment children are inheriting is more relevant, more resonant, and more likely to build the lasting audience connection that sustains a property over multiple seasons.

Have the Climate Talk Before Creative Is Locked

Small choices, thinking behind the scenes, and background art, can strengthen authenticity with little or no development cost. Productions already make these decisions; the difference is making them intentionally. room, world-building, and character design — before creative decisions are locked. It costs nothing to ask whether your lead character notices the natural world, or to ensure story arcs offer agency alongside awareness.

When pitching original IP, be open about how sustainability informed your creative vision. Frame it as creative intentionality: you've considered the world your story inhabits and made choices that will resonate with contemporary audiences. That's a creative asset, not a message.

SERVICE PRODUCTIONS

Service production comes with different constraints — locked scripts, client approvals, and tight schedules and budgets. The conversation requires more finesse, but it's still worth having.

Position environmental detail as a way to make the world more believable and immersive, not as an added theme. Weather patterns, seasonal ecosystems, and authentic background details all enhance production value while quietly building environmental authenticity.

A strong entry point is your client's own sustainability commitments. Many major streamers have published goals that extend to their content. Asking early, "How can this production help support your sustainability objectives?" signals strategic thinking and positions you as a collaborative partner rather than someone introducing a new agenda.

Where the Flexibility Lives

When creative flexibility is limited, focus on areas with the greatest opportunity: background design, layout, and lighting. These elements allow environmental authenticity to be woven into the world without changing the story. A community garden, solar panels, or a drought-affected riverbed doesn't alter the narrative — it simply makes the setting feel more real.

Finally, offer options. A tiered approach gives clients control over their level of engagement. Giving clients choice makes the conversation easier and increases the likelihood of adoption.

LIGHT

Background details — a community garden, solar panels, a drought-affected riverbed.

MEDIUM

Incidental dialogue or character behaviours that reflect the world outside the frame.

DEEPER

A story arc that carries environmental themes through the season.



Image Credit

The Creative Team

Conversations with buyers and broadcasters are often the easier part. The more important climate conversation may be the one happening with the people making the show. The key isn't to pitch sustainability — it's to talk about story, craft, and world-building.

With your showrunner and writers

Keep the conversation focused on authenticity. Most creative leaders want their world to feel specific and believable, so ask: “Does the world outside our characters’ windows feel like the one children are actually growing up in?” That shifts the discussion from messaging to realism.

Give writers research, then let them solve the creative problem. The fact that only 1.4% of children’s episodes address climate is less a criticism than an opportunity. Rather than asking writers to include climate themes, ask what their characters notice about the world around them. Those observations reveal character while making the world feel more authentic.

With your art director and production designer

These are often your strongest allies. They’re already responsible for building the visual language of the world, so introduce environmental authenticity before the look is locked. Ask: “What relationship does this world have with its natural environment?”

The answers may appear in subtle details — a drought-dry riverbed, native plants, solar panels, or a community garden. None of these change the story, but together they make the setting feel lived-in and contemporary.

With Your Director

The director shapes how environmental content is experienced. The goal isn't to make audiences notice it — it's to make it feel natural. Ask: "How do we make this feel like part of the world rather than a message about it?"

The strongest environmental storytelling is woven into the texture of the production through tone, pacing, and restraint.

IF YOU'RE A CREATIVE

You don't have to wait for a producer to start the conversation.

Writers, directors, designers, and artists already make countless decisions that shape how a world feels. Bringing environmental authenticity into those decisions isn't about adding an agenda — it's about creating worlds that feel more truthful, relevant, and alive.



06

CHAPTER SIX

The Road Ahead

Many of the biggest barriers to sustainable animation are not individual, they are systemic. Addressing them will require collaboration across the entire screen sector.

A Call to Action

As the Canadian animation industry rebuilds following several challenging years of financial uncertainty, there is an opportunity to ensure sustainability is no longer treated as an optional add-on, but as part of the industry's future foundation.

Individual producers can make a significant difference. But many of the biggest barriers to sustainable animation are not individual, they are systemic. Addressing them will require collaboration across the entire screen sector.

The transition will not happen through the efforts of producers alone. Funders, broadcasters, studios, educators, industry organizations, governments, and technology partners all have a role to play.

Canadian funders can build sustainability into the funding framework.

Public funders have an opportunity to both incentivize and reward sustainable production practices. Sustainability considerations can be integrated into existing funding programs by recognizing productions that measure their emissions, adopt sustainability plans, build internal capacity, incorporate environmental content where appropriate, and share lessons learned. Supporting industry-wide carbon measurement, training, and pilot initiatives today will help reduce costs and improve consistency across the sector tomorrow.

Broadcasters and streamers can make sustainability part of production excellence.

Commissioning partners can encourage sustainable production by recognizing it as one of many indicators of quality production management. They can also support authentic climate storytelling by commissioning content that reflects the realities of a changing world across genres and audiences. As international studios increasingly introduce sustainability expectations throughout their supply chains, Canadian producers who develop these capabilities early will be well positioned to compete globally.

Shared Standards, Everyday Practice

Industry organizations can create shared standards and practical tools.

Producers should not have to navigate multiple carbon calculators, reporting systems, or sustainability frameworks. Industry organizations can work together to develop consistent Canadian guidance, shared reporting approaches, practical training, and resources that reduce administrative burden while improving environmental performance across studios and productions. This work is already underway in the live-action space, and is likely to expand to animation production in the near future.

Studios can embed sustainability into everyday production.

The greatest opportunities often come from better planning rather than new technology. Measuring emissions, reducing unnecessary revisions, building reusable assets, improving energy efficiency, considering the environmental impacts of AI tools, and integrating sustainability into production planning can all reduce costs and emissions while strengthening long-term resilience.

Governments can support innovation and workforce development.

Governments can accelerate progress by supporting workforce training, research, clean technology adoption, and innovation within Canada's animation sector. Investing in sustainability skills today will help ensure Canadian studios remain competitive in an industry where environmental expectations are steadily increasing.

Closing the Content Gap

Creators can help close the content gap.

Research continues to show that audiences want stories that reflect the environmental challenges and solutions shaping our world. Whether climate is central to a story or simply part of the world its characters inhabit, animation has a unique ability to normalize sustainable futures, inspire curiosity, and imagine new possibilities. Supporting creators with the tools, training, and confidence to tell these stories is an investment in both creative excellence and public understanding.

None of these actions will transform the industry on their own. Together, however, they can help build an animation sector that is more resilient, more competitive, and better prepared for the expectations of audiences, funders, and international partners.

The opportunity is here. The next chapter of Canadian animation can be one where creativity and sustainability grow together — and where the decisions we make today shape a stronger industry for decades to come.

THE OPPORTUNITY IS HERE

Creativity and sustainability can grow together.

Looking Out the Window

Richard Condie made *The Big Snit* in 1985. A couple argue over Scrabble tiles while nuclear war unfolds outside their window. It is nine minutes long. It won an Oscar nomination and has lived in the cultural memory of Canadian animators for forty years. **We keep coming back to it because it keeps being true.**

The Canadian animation industry is not fiddling while the world burns. It is doing something more understandable and more forgivable — it is working. Under pressure, under deadline, under budget, trying to make something good. The window is there. The view is not comfortable. And the temptation to look back at the tiles is real and human and completely understandable.

This guide was written for everyone in our industry who is ready to look up. The industry we know — the artists and technicians and craftspeople that have and are producing some of the world's most iconic animation — is not afraid to look, and most importantly, not afraid to act.

The people who built this industry did it with the same combination of creativity, resourcefulness, and refusal to accept the limitations of the form that this moment requires. They made hand-drawn films that changed how children could understand the world. They built global franchises from basements. They do things every single day that look from the outside to be impossible.

Sustainable production is possible. The tools are here. The knowledge is here. The business case is here. The guide you've just read is an attempt to put all of it in one place: specific, practical, Canadian, and honest about what is hard.

What comes next is up to you.

Thank you for reading.



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