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Greening AI in the Public Sector

An introductory handbook for procurement

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Introduction

As public agencies consider adopting new artificial intelligence products, it's already clear that residents and public sector staff have numerous concerns — in particular, concerns over the harmful environmental impacts of AI infrastructures. As residents press cities and localities to take climate action, and agencies wonder how AI acquisition will affect emissions targets and IT bills, there is a need for a more environmentally-sustainable approach to AI use. Fortunately, agencies can take practical steps to optimize sustainability while preserving quality of service.

This handbook demonstrates how to incorporate environmental performance criteria into public AI procurement. The guide, created by **Data & Society** in partnership with the **GovAI Coalition**, is based on 10 months of fieldwork and 5 months of co-design interviews and focus groups with local government staff and green software practitioners. It introduces staff and officials to the rapidly-developing field of greener computing and suggests entry-level, low-effort actions that can augment a standard procurement process. It is intended for use by anyone involved in AI adoption in an organization.

Fortunately, it is getting easier to measure and mitigate AI's environmental footprint, and municipal and state governments have an important role to play in the responsible adoption of this technology.

The goals of this handbook are to:

1. Provide a foundational understanding of the environmental impacts of AI systems;
2. Outline the characteristics of greener AI;
3. Delineate the benefits of greener AI across ESG criteria, government budgets, and product performance;
4. List the steps you'll take to communicate with vendors about the sustainability of their products and decide which one is right for the job;
5. Provide examples of RFPs, scorecards and evaluations, and contract language; and
6. Direct you to resources for next steps.

Most procurement teams already incorporate environmental, social, and governance (ESG) criteria into their review processes. Applying this experience to AI products is similar.

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DEFINING AI

- An **AI system** is "a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment" (OECD).
- **A model,** in the context of AI, refers to a specific machine-learning program. In many cases, an AI system comprises many models. The model works like the engine of a car, providing the underlying functionality, but needing many surrounding systems to work with human input.
- **Generative AI** is type of AI that can create new content, such as text, images, videos, music, and more, based on learned patterns from existing data. The most common generative AI systems are based on large language models. A large language model is a model trained on a very large data set of human-authored text.
- **Greener AI** "focuses on reducing the environmental impact of AI systems throughout their lifecycle. It emphasizes the standardization of measurement and metrics to ensure transparency, strengthen confidence in AI technologies, and drive continual improvement" (Green Software Foundation).

It's not easy being green...

The material in this guide can be adapted for different communities; in some places, emphasizing efficiency or cost savings — rather than environmental sustainability — might be more salient for building momentum for organizational change.

When to use this handbook

Typical systems and procurement pathways

This guide generally follows a formal solicitation process or competition, but the guidance outlined here applies across any AI acquisition (including under-threshold purchases, piggybacking, free pilots, and bundled features in existing contracts). In any setting, for example, you can ask about a vendor's environmental impacts at any time or via an IT review process, or you can add sustainability addenda to a contract.

Table 1, on the following page, outlines typical procurement pathways for common AI products. The takeaway is that, generally, the more you can customize a product, the more you can shape its development toward greener computing. On the other hand, products that sell "off-the-shelf" may enable more straightforward reporting and comparison because there is a discrete, standard system to measure.

Most current government AI usage runs through an outside developer, where actual computation happens on vendors' servers. On-premise AI systems are rarer and may require significant infrastructural investment. The guidance in this handbook applies to both scenarios: in the latter one, considerations and advice for "the developer" (i.e., vendor) will likely also apply to your own IT teams.

Sustainable computing is not all-or-nothing

Your agency can make steps toward greener AI across any product type or procurement mechanism.

TABLE 1: PROCUREMENT PATHWAYS AND CONSIDERATIONS

Procurement pathway	Description	Considerations when using this guide Note: *All* of these pathways allow for disclosures on environmental metrics outlined in this handbook.
Buy	**Commercially available products** (Content creation, basic analytics, email assistance, & basic chatbot interactions)	▪ May or may not go through an open, competitive procurement process. ▪ Likely more straightforward measurement and reporting process, as there are fixed model types available. ▪ May have environmental information publicly available in databases.
Customize	**Mature AI systems with known applications** (Traffic flow optimization, document processing at scale, or permit processing) **Cloud-based AI platforms for enterprise digital transformation** (Collaboration, knowledge management, analytics)	▪ More frequently procured through open competition. Follow this handbook's guidance for RFPs and evaluation. ▪ Likely allows for a suite of off-the-shelf products that may be minimally customizable. ▪ Vendor evaluations should include sustainability considerations outlined in this handbook. (e.g., direct them toward smaller models that use less energy). ▪ Offers more flexibility on the user side to measure and manage the environmental impact of your agency's usage.
Build	**Complex AI solutions for newer use cases where outcomes matter** (Policy impact modelling, dynamic benefits optimization, or real-time emergency response systems)	Conversations with vendors about developing personalized models should include: ▪ documentation of an approach to sustainability, evidence that developers are familiar with environmental impact metrics ▪ disclosure of environmental metrics ▪ technical support ▪ communicative engagement on greener computing practices
	Pilot AI products for emergent/experimental use cases (For smart infrastructure, predictive maintenance, or public engagement platforms)	

Caption: Procurement pathways are excerpted from the Open Contracting Partnership Buying AI Guide; further considerations draw on personal communications with Dr. Cari Miller.

AI's environmental impacts

Those concerned with the environmental footprint of AI are most focused on a recent wave of systems known as generative AI. These systems can produce realistic media and text, but require an enormous amount of data to train, which in turn requires more computationally- and resource-intensive hardware and data centers.

AI does not exist in a "cloud;" rather, these technologies run through hardware and infrastructure in data centers, or large warehouses of computer servers. The negative consequences of AI infrastructures are now **well-documented** — and **public resistance** to these impacts is only growing. These impacts include:

Energy

- Data centers use an enormous amount of energy to keep their servers running. **Research suggests** that data center energy consumption could grow from 1.9% of the total annual US electricity consumption in 2018, to 6.7–12% of consumption by 2028. Much of this energy is to power the servers themselves, but a significant amount is also dedicated to cooling the buildings.
- The two most common cooling methods for data centers are dry cooling (i.e., air conditioning) or water-based cooling. The former uses more electricity while the latter consumes (typically) municipal water; there is generally a tradeoff between the two resources in any data center design.

Water

- Water-based cooling uses cold water to absorb excess heat. **Two-thirds of data centers built since 2022 are sited in places with high water stress**; beyond adding general strain, the amount of water required on the hottest days can **far exceed what the local municipal water system can support.** Depending on agreements with the locality, this might mean diverting water from homes, businesses, and agriculture."
- Data centers that are not cooled primarily by water still have water impacts, **as power plants that supply electricity also use water** as cooling mechanisms.

Air pollution

- Data centers rely on an energy mix heavily skewed toward fossil fuels. Their energy demands have not only delayed the retirement of old coal facilities, but are now driving federal investment into building the **first new coal** plants in over a decade. They also regularly run highly-polluting diesel backup generators. The **public health costs of this pollution** are projected to be comparable to those of all on-road vehicles in California.

Materials & supply chain

- Data centers rely on physical hardware — including semiconductor chips and battery storage systems — that is sourced from around the world. They require inputs including nickel, copper, cobalt, and rare earth minerals — the mining and processing of which are **well-documented** to have polluted local water supplies, involved child labor exploitation, and devastated ecological well-being in mining regions.

E-waste

- Computer servers deprecate quickly and need to be regularly replaced. With the explosion of data center infrastructure, retired servers are contributing to a **rapidly-growing problem of electronic waste, or e-waste**. Much of this waste sits in landfills abroad, leaching toxic metals into local ecosystems and posing serious hazards to workers who process unsafe hardware.

What do you need to know about greener computing?

Factors that directly determine an AI model's environmental footprint

According to the **Green Software Foundation**, three actions make AI more sustainable:

1. **Using less energy** to train and run a model, typically by reducing the scale of the model or altering the design.
2. **Using fewer physical resources**, such as minimizing the amount of hardware or its rate of replacement. Vendors can also make choices about the efficiency of the hardware itself.
3. **Using energy more efficiently**; for example, by **flexing energy-intensive operations to occur when the grid is running cleaner**.

All vendors are, from a technical perspective, able to provide at least some level of information on these factors — especially for energy efficiency. If they don't have exact numbers, then they have several options to make and provide estimates.

TAKEAWAY:

There are standards and practices to measure a product's energy, hardware, and carbon efficiency, and vendors should be able to provide this information.

FRUGAL AI

Several of the resources in this guidebook draw from the concept of "**frugal AI**," which is an increasingly-popular term to describe an AI governance system that minimizes data and resource consumption. Frugal AI advocates deploying AI only when its benefits are clearly-defined; choosing smaller, task-specific models; and running computation as efficiently as possible. The concept originated in **France** and has broad traction in Europe, especially.

Associated factors

Two additional factors have been associated with or help facilitate greener AI development: (1) the deployment of smaller, purpose-built models, and (2) use of open computation methods (e.g., open-source software).

1. Model size

A standard attribute for AI products is the size of the model. This is often measured through the number of parameters and the size of the dataset used to train it. Model size can generally be an accurate proxy for total lifecycle resource consumption.

Many of the well-known AI products — like OpenAI's ChatGPT or Google's Gemini — adhere to an aggressive "bigger is better" approach, offering one-size-fits-all general-purpose AI products. The alternative is a model more narrowly trained for a specific purpose, built with curated data relevant only to the model's task — like a chatbot designed to answer questions about a city permitting process, or a system to triage 311 requests. A 2025 **report on the subject by UNESCO states that**:

> *Small language models (SLMs) can be powerhouses: Adopting smaller, fine-tuned models for specific applications can deliver energy savings of up to 90% while maintaining high accuracy. In addition to energy efficiency, small models are more accessible in low-resource environments with limited connectivity, offer faster response times, and are cost-effective.*

TAKEAWAY:

The size of a model and the scope of its tasks are heavily correlated with its energy and hardware efficiency. Smaller models are generally more environmentally friendly than larger ones.

2. Open vs proprietary

AI products, like most software, can be developed using data and code that are open or closed (e.g., open-source or open-weight). In general, models with open features enable visibility into back-end development, allowing others to measure, adapt, and audit what has gone in and come out. These qualities lend themselves to more robust verification and governance of sustainability, in comparison to their less open counterparts.

The major large language model providers — OpenAI, Google, Anthropic, Microsoft — use proprietary models with closed-source software. These companies can release information about their models if they choose, but they typically don't, and it is difficult to verify accuracy from the outside.

Use of open-source AI products is a widespread and expanding practice, including for major enterprise usage. A study by McKinsey, the Mozilla Foundation, and the Patrick J. McGovern Foundation details the **uptake of open-source AI in enterprise settings** and reports high satisfaction among these users.

TAKEAWAY

Open models typically allow much greater transparency into environmental performance. This access enables measurement and improvement of critical metrics.

SMALL STEPS, BIG IMPACT

Even small steps toward more sustainable AI matter. Communication and progress with vendors may vary, but simply asking for environmental impact information is important because pressure from buyers is rapidly shaping industry trends. **Commercial suppliers have reported that an uptick in requests for sustainability information has motivated them to quantify their performance**. Government customers, as a collective, command significant buying power, and AI developers are feeling the pressure.

Benefits for the environment and your agency

Procuring greener AI doesn't only benefit the planet — advantages can be felt across your budget and organizational performance.

1. Cost savings

Greener models are often a fraction of the price of all-purpose products. Energy efficiency translates to cost savings on electricity, hardware, and external computational infrastructure. These savings can be felt by the customer through multiple means:

- **Smaller and more energy-efficient models are generally both cheaper to train and cheaper to run** — savings that are often passed along to the customer.
  - → Additional benefits of open models: if a provider isn't passing along these savings, you can always run the same model with another provider who will.
- **Energy prices are difficult to forecast long-term.**
  - → Given the rate of developments within tech and energy industries — technologically and politically — this market is subject to particular volatility. What may seem affordable now may become a financial burden down the line.
  - → Additional downsides of proprietary models: it can be a huge headache to disentangle a product from your systems and move to a new provider if the pricing structures change for future contracts.
- **Smaller models that perform well at their specific task can create cost savings felt through staff time.**

2. Public trust

With the wave of coverage of AI's environmental impacts in recent years, local officials are finding that climate is among the top constituent concerns when it comes to AI.

- **Your procurement decisions around AI can have significant impacts on your own city's climate resolutions and emissions targets.**
  - → By procuring an energy-intensive AI product, you may be committing your agency to emissions out of your control. If you're not asking these questions now, you may need to down the line, and an unexpected rise in your emissions totals could be an unwelcome complication.
- **Demonstrating that your teams have done due diligence in evaluating environmental impact can communicate that you take constituent concerns seriously.**
- **The energy, water, and land impacts of data centers have become major political issues regionally and nationally, and decisions around AI are unavoidably caught up in disputes over data centers.** More sustainable AI procurement not only supports trust between your offices and the public, but also supports colleagues who may be making decisions about local data center siting.

3. Enhanced performance

The factors that make an AI product more sustainable typically also translate to better performance outcomes.

- **Smaller models, geared toward a particular purpose, use fewer data to train.** These data must be curated carefully in order to produce the desired output, and therefore often outperform larger models at narrower tasks.
- **Open-source products allow engineers visibility into a model's data and software operations.** This transparency means that problems can more quickly be identified, isolated, and addressed. When working with a huge, general-purpose, black-box model, it can be impossible to figure out why you're experiencing a problematic outcome, let alone go in and fix it.
- **Open-source technology can also be more easily integrated into other software products.** As your tech needs evolve, you'll have better interoperability with new hardware and software, as opposed to being stuck with the limitations of proprietary products.

4. Control and autonomy

Open-source and lower-impact AI systems are far more likely to be customizable to your needs and flexible in response to unpredictable future developments.

- **One of the most significant benefits to the use of an open-source model is that you can avoid vendor lock-in.** Purchasers of huge enterprise AI are finding that, once they embed a major proprietary product into their agency operations, they are **compelled to keep using that company** because any additional software has to be compatible. It also becomes difficult to extricate the AI product as these tools integrate with overall IT systems.
  - → In contrast, open-source tools can be widely interoperable or simply ported to a different vendor who can run them for you.
  - → Unstable global resource markets are creating major supply chain volatility. With proprietary models, you accept a high level of risk if your vendor experiences business disruptions.
- **Public and private clients alike describe communication challenges with major AI developers.** Once they sign a contract, they find that the company is not incentivized to respond to their needs.
  - → Other suppliers on the market — including small companies with a few dozen employees — have better track records for working closely with customers to ensure quality. Cities with significant buying power could be critical contracts that these companies don't want to lose, granting you a negotiating power that is unlikely with huge enterprise corporations.

Additional benefits

- Our interviews and feedback sessions with GovAI Coalition members made clear that localities are actively seeking support around sustainability within AI procurement. By adopting this guidance, **you and your peers can lead the way** in setting the standards that shape how local governments across the U.S. think about the environmental impacts of AI.
- **Efficiency reporting is increasingly becoming a requirement to do business,** especially as states (**notably, California**) and other countries implement more ambitious climate commitments. We are quickly moving toward standardized metrics and practices, so the process is only getting more straightforward.
- **Cities and localities can exert market pressure** that drives AI developers toward sustainable development. Requesting energy efficiency information puts companies on notice that these measurements may become necessary to win a government contract.
  - → Additionally, **vendors report** that disclosures — particularly when made public as through procurement — are avenues through which they showcase their strengths to be competitive in a crowded market. Soliciting this information enforces a feedback loop wherein sustainability-minded companies stand out.

Pathway to procuring more sustainable AI

Integrating environmental performance into your AI procurement doesn't have to be hard. What follows are the concrete steps that your team can take, across the procurement cycle, to make this a reality.

Step 1

Prepare for procurement

Step 2

Interface with vendors

Step 3

Implement greener software practices in the agency

Step 4

Encourage thoughtful and responsible use of AI across agencies

Step 5

Go above and beyond

Step 1: Prepare for procurement

1a: Gather all relevant stakeholders

AI technologies may feel novel, but the expertise found around your offices and in the community is still essential for thinking through AI procurement. As you consider whether AI is a solution to your problem, you will benefit from having diverse perspectives in the room.

Public input should always be part of decisions to procure systems that will impact resident services. Data & Society's guide to community participation in procurement is a great resource for robust inclusion practices.

Additionally, as many systems influence how government employees do their jobs, ensure that staff are also at the table in AI adoption decision-making. A toolkit out of Wales offers an actionable framework for empowering worker voice in public AI procurement.

TABLE 2: STAKEHOLDERS FOR GREENER AI

Must Include	Should include (depending on use case and governance structures)
▪ Procurement team ▪ City/County Attorney's office ▪ IT teams + CIO/CISO or IT Security separately ▪ Purchasing office/agency ▪ Community members ▪ Workers and staff, including union representation where applicable, particularly for tools that touch staff workflows or evaluation	▪ Environmental and sustainability offices ▪ Responsible AI / AI strategy officials ▪ Department-level subject matter experts / end users ▪ Equity/civil rights office ▪ CFO or Budget office for multi-year cost forecasting ▪ Risk management ▪ Records Management / Public Records Officer ▪ Domain experts

Caption: Adapted from contributions from Marina Psaros.

CHECK OUT:

- ☐ The Center for Democracy and Technology has an excellent report, "To AI or Not to AI: A Practice Guide for Public Agencies to Decide Whether to Proceed with Artificial Intelligence."
- ☐ Researchers at Carnegie Mellon University built "The Situate AI Guidebook: Co-Designing a Toolkit to Support Multi-Stakeholder, Early-stage Deliberations Around Public Sector AI Proposals." The toolkit is for employees across the public sector based upon AI deployment case studies.
- ☐ The UK's Crown Commercial Service also has "guidance on assessing if artificial intelligence is the right solution" for users in the public sector.
  - → Its "Buying Greener Technology" guide includes additional considerations such as hardware needs and system interoperability.
  - → And its Guidelines for Using AI in the Public Sector project includes a number of excellent resources on procuring and operating AI.
- ☐ The Green Web Foundation has a report titled, "Thinking about using AI? Here's what you can and (probably) can't change about its environmental impact."

Note:

Some AI platforms are procured across an entire organization to provide access to a suite of customizable tools, including different models. Staff can use subsets of these tools without requiring a new procurement process; as a result, each new use case within the suite should undergo its own full evaluation for sustainability considerations.

1b: Make sure that AI is the right tool for your needs

The most impactful way to avoid the cost and footprint of AI is to not use AI in the first place. To determine if AI is suitable requires a clear and complete definition of the problem being solved. A number of guidebooks exist to walk public sector agencies through a collaborative problem-definition process; if you decide, in the end, that an AI-based solution is best, this process will also help you narrow in on your target and clarify which models are appropriate.

While it is always best to begin with a clear problem that an AI product is intended to solve, market trends toward generalizable tools, chatbots, and automated workflows ("agents") mean that many governments are adopting AI nonspecifically for the purpose of "AI-readiness." In such cases, staff can still use several of the resources on this page to weigh potential risks and benefits.

1c: Get more information

Before writing RFPs, reaching out to vendors, or reviewing product offerings, consider some of the following actions:

- **Note that trends in sustainable AI evolve quickly.** Best practices vary depending on the type of system you are procuring. You can use requests for information (RFI), expressions of interest (EOI) processes, or more informal check-ins with vendors to help identify the most relevant requirements (subject to your procurement code and ethics rules). Some localities may also organize industry days, vendor forums, or market engagement sessions to help shape procurement.
- **Do your research.** Beyond industry engagement, consider tasking a member of the procurement team with market research.
- **Weigh the specific strengths and expertise of your team**. If your IT team has cloud cost expertise, you may want to lean into evaluating cloud carbon impact; if your environmental office has greenhouse gas inventory experience, you can lean into Scope 3 emissions questions.

RESOURCE SPOTLIGHT: THE GOVAI COALITION

The GovAI Coalition has an **extensive hub of templates and resources** to guide responsible AI governance in the public sector. On their website, you can find frameworks, factsheets, and case studies that can be readily adopted and applied.

Step 2: Interface with vendors

The heart of the process of procuring more sustainable AI is through communication with vendors.

In this section, we first lay out the kinds of sustainability metrics that you can more readily solicit and suggest best practices. Then, we offer an outline of what greener procurement looks like in practice — from example questions to scorecards and contracts.

Step 2a: Request or require information

What do we mean by "sustainability metrics"?

Today, there are multiple metrics across which to measure environmental impacts of an AI system across its product lifecycle. Table 3 outlines the suggested criteria most readily available as of May 2026.

TABLE 3: SUSTAINABILITY METRICS

Metric	You could request ...	Notes
Energy efficiency of the model	kWh per task/token	Should be easy to measure. See the section on "vendor tools" for measurement options.
	Hugging Face's **AI Energy Score**	This resource works best for developers that control their entire compute stack. The vendor lists a rating from one to five stars.
Carbon emissions associated with the model's training and operation	Green Software Foundation's **Software Carbon Intensity (SCI) for AI score**. The SCI is reported as an efficiency rate: weight of CO_2 per functional unit.	See the sidebar on Page 17 for details about the Green Software Foundation and its available standards and resources.
	Weight of CO_2 emitted per task or functional unit	See the section on "vendor tools" for measurement options.

Metric	You could request ...	Notes
Environmental footprint of the data centers comprising the company's cloud infrastructure	Data center Power Usage Effectiveness (PUE)	More commonly measured and available.
	Data center Water Usage Effectiveness (WUE)	Less commonly measured and available.
Model size and compute intensiveness	Parameter count	These metrics are easy to measure and report, but they should be considered alongside the above metrics as they are strong but imperfect proxies for environmental performance.
	Number of CPU and GPU compute hours for training and inference, or number of gigabyte memory hours for data storage.	

Caption: Adapted from conversations with the Green Software Foundation, Marina Psaros, Lisa McNally, and Dr. Udit Gupta.

For a deeper understanding of AI sustainability metrics, see the International Telecommunications Union's **2026 guide to measuring AI environmental impacts**, which covers a more in-depth slate of Key Performance Indicators.

RESOURCE SPOTLIGHT: THE GREEN SOFTWARE FOUNDATION

Check out resources from The Green Software Foundation (GSF), an industry leader in sustainable computing:

- ☐ **Accredited measurement standards:** GSF developed the first internationally-recognized ISO standards for measuring software carbon emissions. Accredited measurement standards: GSF developed the first internationally-recognized ISO standards for calculating software carbon emissions. Its Software Carbon Intensity (SCI) scoring system can help streamline reporting
- ☐ **Free, open-source courses** that support technical skill-building for developers and agency staff looking to embed sustainable IT practices.
- ☐ **Membership and guidance:** GSF offers consultation and a peer nework; membership is **free** to government and nonprofits.

Greener AI in practice: Using the SCI in vendor engagement:

- ☐ The lowest-effort option is to ask vendors whether they have calculated an SCI score for the application in question.
- ☐ A step up is to require the vendor to calculate an SCI score as part of the engagement.
- ☐ For vendors selling a suite of tools, go deeper by requesting SCI scores for multiple applications.
- ☐ Further steps include embedding contractual language that requires demonstrated improvement in SCI scores over the term of the engagement.

Note that the SCI score is not designed for between-vendor comparison, and is better understood as reflective of a vendor's commitment to measurement and sustainability. It is most useful for tracking improvement over time within a given application.

Caption: Thanks to Navveen Balani and the Green Software Foundation for their input.

Challenges to reporting and what you can do about them

The suggested measurements above are reasonably available to developers and vendors. That said, there are still meaningful challenges to compliance with sustainability reporting in this field. These include a lack of transparency from major cloud providers, nascency of consistent standards and benchmarks, and a shortage of real-time training and user data. Overemphasis on one particular numerical indicator may eclipse other useful information about a vendor's sustainability practices.

Considering quantitative vs. qualitative evaluation questions

Requesting specific quantitative metrics alongside more open-ended queries may help strike a balance such that you can make substantive comparisons between products but also open lines of communication with vendors.

That said, **research on GovAI FactSheets** finds that vendors trend toward providing vague, high-level answers even when asked direct technical questions. **Importantly, you should not simply accept nonspecific claims of sustainability**. Vendors' claims should be substantiated by explanations of methodology, standards, or concrete technical practices.

Greener AI in practice: Example RFP questions

Example 1: Quantitative metrics in an RFP question

As indicated in Table 3, one sustainability metric that you might request is the Hugging Face AI Energy Score (Hugging Face is a company advancing open-source, energy-efficient AI). The example RFP question in the following sidebar, copied from their **website**, suggests language to solicit an Energy Score. It also illustrates how additional criteria can support or supplant the specific information you request.

EXCERPT FROM HUGGING FACE

As part of our commitment to sustainability and transparency, we ask vendors to disclose the energy efficiency of AI models and systems provided under this RFP. Please provide the AI Energy Score (or an equivalent industry-standard energy efficiency rating) for each AI model or system proposed. If an AI Energy Score is not available, provide the following details:

- ☐ Estimated energy consumption (in kWh) for typical workloads.
- ☐ Carbon footprint per inference/training session.
- ☐ Any energy optimization techniques used in model training and inference.
- ☐ Certifications, benchmarks, or third-party validation related to energy efficiency.

Vendors that can demonstrate commitment to minimizing AI-related energy consumption and carbon footprint will be prioritized in our evaluation process.

Caption: Excerpt from the Hugging Face AI Energy Score website, under the FAQ question, "What can an enterprise do to drive adoption of this work?" Accessed April 10, 2026.

Example 2: Qualitative metrics in an RFP question

The UK Crown Commercial Service's "**Buying Greener Technology**" guide includes an example of a more open-ended RFP solicitation. It also defines criteria for how a vendor would substantiate their claims. Additionally, as this example demonstrates, you can ask vendors to provide information about a holistic sustainability approach, which can reveal valuable context and offer an opportunity to build a relationship with the vendor.

EXCERPT FROM THE CROWN COMMERICAL SERVICE

The following criteria, developed with guidelines from the Low Carbon IT Assessment Partner GoCodeGreen, can be included in tenders to encourage improvements in how software impacts the environment. Note that the wording and scoring proposed can be used as a template and should be adapted to align with specific needs of the organization and the market, following engagement with relevant stakeholders.

Wording: The bidder must demonstrate a well-defined and product-specific approach to measuring, baselining, and reducing the carbon impact associated with their software solution. The approach should include adherence to recognized standards, detailed methodologies, and clear plans tailored to the buyer's hardware and operating system environment.

Verification: Bidders are required to provide a carbon impact measurement plan, including any case studies, third-party validation, and detailed methodologies specific to the software product. Alongside the plan, bidders should provide clear documentation of their approach, with references to recognized standards such as the GHG Protocol.

Caption: Excerpt from the Crown Commercial Service, "**Buying Greener Technology**", p. 36 Note: This resource is also recommended for its scoring rubric. See step 2b.

Additional resources

For additional examples and more detail, the resources in the table below are designed for procurement professionals. Many of these resources will also be helpful for your IT teams; they include more technical information and guidelines for the procurement process.

TABLE 4: RESOURCES FOR PROCUREMENT PROFESSIONALS

Name	Scope	Highlighted content
UK's Crown Commercial Service's "**Buying Greener Technology**" guide March 2025	Broad scope guide to greener procurement in government. Includes directives on the process of integrating green criteria and has example language. Covers both hardware and software procurement, not specific to AI.	Easy-to-use decisionmaking guidance on the procurement process itself. Suggested language for tenders and evaluation.
GoCodeGreen's **Low Carbon IT Assessment** 2023	Procurement evaluation criteria for software products. Specific to carbon emissions.	Extensive and detailed model scorecards with suggested weighting.
Germany Environment Agency's **Guide on Green Public Procurement of Software** 2018	Fairly technical document on procurement criteria specific to sustainable software. 13 main categories of criteria include energy efficiency, open source, and technology lifecycle. Created in 2018, so it's not specific to AI.	Even more granular criteria for sustainable software. Proposed methods, metrics and methodology to standardize evaluation.
Hugging Face's **AI Energy Score** Actively updated	The AI Energy Score is a technical metric designed to introduce standard measurements of AI energy consumption. The FAQ section of their website describes how it works, and the question on "what can an enterprise do to drive adoption of this work?" has example RFP and contract language.	Description of a common standard. Example RFP questions and contract language.

Name	Scope	Highlighted content
The "**General Framework for Frugal AI**" from AFNOR, an international standards organization in France June 2024	The AFNOR spec is generally considered the most comprehensive guide to sustainable AI currently available internationally. It can be dense, but the information is designed for a public audience and procurement officials. Describes characteristics of "frugal AI," a term that encompasses both environmental sustainability as well as a practice of only using AI and resource-intensive ICT when it is truly necessary. See page 8 for more detail on frugal AI. Identifies 31 best practices, organized into 7 themes, and presents them systematically and accessibly. A brief summary sheet can be found **here**, and a brief list of key engagement activities can be found **here**.	The 31 best practice factsheets are extremely helpful, but can be dense to work through. Readers may find that starting with Section 3.2.3, the "Frugal AI Project Process" (p43), is best: it narratively describes a frugal AI development and procurement process, and situates links to individual best practices within the text. A section titled "Communication" (p48) includes language that can be adapted into RFPs.
Circular and Sustainable Public Procurement for ICTs by GovStack and the International Telecommunication Union 2023	A comprehensive, step-by-step guide to green ICT procurement in the public sector. This document primarily focuses on hardware procurement, but the resources to build sustainable procurement processes, in general, apply well to software and artificial intelligence products.	The toolkit is easy and engaging to read — a standout strength is its clear and effective diagrams, visuals, and examples. Offers sections on: ▪ the foundations of sustainable procurement; ▪ appropriate policy and strategy; ▪ coordinating the necessary conditions for success; and ▪ detailed procurement activities and examples

Caption: This table is not an exhaustive list of resources. Within these documents, you will find even more sources that may be helpful to both laypeople and IT professionals.

Vendor tools: What if my vendors say that they can't get this information?

At the time of publication, there are multiple technical tools that a vendor can use to comply with a request for information. If, for example, you request the actual CO_2 emissions associated with a model, there are several ways the vendor can approach this measurement. However, this field is changing quickly, so we suggest directing vendors to developer-facing resources, rather than proposing one singular methodology.

Several organizations are dedicated to green computing; they will be the best places for a vendor to go for the most up-to-date guidance on sustainability calculations. Therefore, you might consider sharing any number of the following resources with vendors in order to help them meet your requirements. Or, you might consider narrowing in on the most applicable measurement tool that best corresponds to the metrics you are seeking.

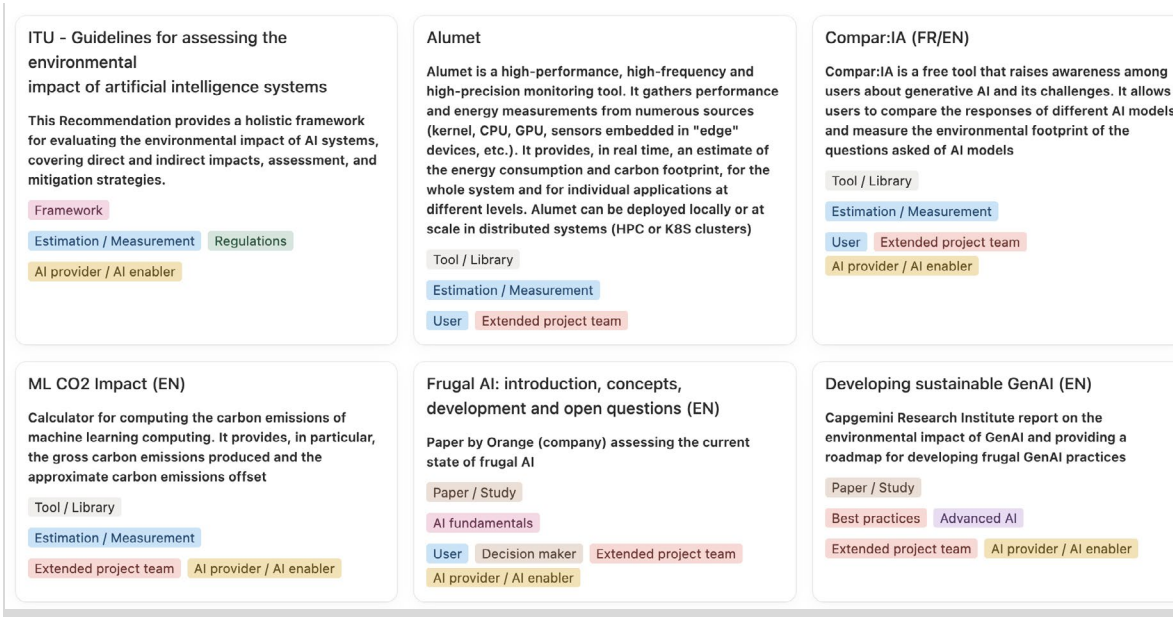
For reference, on the following page is an example of what one of these databases looks like. As you can see, it directs developers toward a variety of technical pathways and research that would support compliance with reporting requirements (*image on the following page*). Note that any of these resources may be useful for your own IT teams to independently validate a vendor's claims or to audit your agency's internal tech systems.

TRY SENDING VENDORS ONE OF THESE UP-TO-DATE LISTS OF RESOURCES:

1. As described above, the **Green Software Foundation** is a great resource to developers and users alike. See the sidebar on page 17 for more information about the organization and its resources.
2. The **Green Web Foundation** has developed its own open-source technical tools to manage the environmental impact of web services. For vendors who can provide a model card, they have a **model card checker**.
3. Hub France IA has a regularly-maintained **repository of resources** for sustainable AI.
4. The **Coalition for Sustainable AI** compiles initiatives for AI standards, best practices, measuring & reporting tools, and transparency.
5. A resource guide from the Institute of Electrical and Electronics Engineers (IEEE) includes its own list of **Green Software Measurement Tools** (though it may not be updated).
6. Multiple projects compile technical and non-technical resources on Frugal AI. See: Cambridge University's Judge Business School's **Frugal AI Resource Hub** or Rémy Marrone's **Frugal AI project**.

As of May 2026, some of the leading tools for carbon and energy calculations include **CodeCarbon**, **EcoLogits**, and the **ML CO2 Impact calculator**. The **IEEE measurement framework** also enables calculation of energy consumption and CO_2 emissions. Many major cloud providers make some information available to customers via dashboards, as well. These can be used in addition to or instead of scoring systems like the Software Carbon Intensity tool or the AI Energy Score (see Table 3 on sustainability metrics).

EXAMPLE DATABASE: FRANCE'S FRUGAL AI HUB



Source: "Resources for sustainable AI," AI & Environment working group of Hub France IA, accessed June 17, 2026.

Step 2b. Evaluate vendor responses

In order to make sense of a vendor's sustainability performance, you will need to measure responses against a baseline or via a scorecard (if using a formal open procurement process). Evaluating responses can be done by simply comparing numeric scores and values, or can become as detailed as ranking a vendor's full sustainability practice.

The **UK's Buying Greener Technology guide** includes a scorecard that corresponds to its sample RFP question (excerpted on page 19).

Check out this example on the following page to see how you might assign points in a robust sustainability evaluation. You might not choose such exhaustive criteria, but you can always adapt these standards to a more narrow application.

GREENER AI IN PRACTICE: EXAMPLE SCORECARD

Evidence provided	Score
No plan or baseline: The bidder does not provide any current plan, baseline measurement, or roadmap specific to reducing carbon impact of the software product. **No product-specific details:** The submission lacks any product-specific information and focuses solely on generic or company-wide practices that are no different to those included in Carbon Reduction Plans.	0
High level plan: The bidder presents a high-level plan that outlines the intention to measure and reduce carbon impact of the software product, but lacks detailed execution. **Roadmap with targets:** A roadmap is provided with clear targets and timelines, but it remains broad and not fully tailored to the specific software product. **Technical expertise:** Evidence of technical expertise and resources available for implementing the plan is demonstrated, though the plan is still in the preliminary stages.	33
Detailed product-specific plan: The bidder provides a detailed plan that includes a measured baseline of the software product's carbon impact. The plan provides a high-level explanation on how this impact might vary considering the buyer's hardware and operating system environment. **Compliance with standards:** The plan outlines specific steps for reducing emissions, with clear adherence to GHG Protocol standards. **Regular tracking and checkpoints:** A clear schedule for regular tracking and updates is provided, with defined checkpoints to ensure ongoing compliance and improvement.	66
Estimated emissions for buyer's environment: The bidder provides detailed estimates of the carbon emissions associated with the software product when used in the buyer's specific hardware and operating system environment. The calculations are based on the bidder's internal plan and follow GHG Protocol standards. **Continuous improvement and innovation:** The bidder demonstrates a commitment to continuous improvement by regularly updating their carbon reduction strategies and adopting innovative practices. They provide examples of how past updates have led to measurable reductions in carbon emissions.	100

Source: Excerpt from Crown Commercial Service, "Buying Greener Technology," pp. 36-37.

Step 2c: Require ongoing reporting in contracts

The benefits of using more sustainable AI tools persist throughout a contract's engagement; you can continue to integrate sustainability into your agency's product use. Importantly, even if you do not require environmental performance information in the procurement process, you can still ask that companies work toward efficiency while under contract.

Hugging Face's Energy Score resource includes suggested contract language that corresponds to its sample RFP question (excerpted on page 19).

EXAMPLE CONTRACT REQUIREMENTS

Energy Transparency: The Supplier agrees to provide an AI Energy Score (or an equivalent recognized standard) for all AI models delivered under this contract. If the AI Energy Score is not available, the Supplier shall disclose detailed energy consumption metrics, including but not limited to power usage, carbon emissions per unit of AI processing, and energy-saving measures implemented.

Sustainability Commitment: The Supplier shall make commercially reasonable efforts to improve the energy efficiency of AI models provided under this Agreement and implement optimizations to reduce energy consumption without compromising performance.

Ongoing Reporting: The Supplier shall, upon request, provide updated AI Energy Scores or equivalent benchmarks for AI models used in ongoing services under this Agreement. If the Supplier makes changes to the energy efficiency of any AI system provided, they shall notify the Buyer and offer an updated version where feasible.

Compliance & Penalties: Failure to provide required energy efficiency disclosures or a material deviation from the disclosed AI Energy Score may be considered a branch of contract, subject to corrective measures, renegotiation of terms, or penalties as determined by the Buyer.

This requirement aligns with our organization's sustainbility goals and ensures that vendors contribute to reducing the enviromental impact of AI deployments.

Caption: Taken from the Hugging Face AI Energy Score website, under the FAQ question, "What can an enterprise do to drive adoption of this work?" Accessed April 10, 2026.

Step 3: Implement greener software practices in the agency

At any step, your own agency can monitor energy usage and hardware efficiency, regardless of whether you're using the greenest AI product.

Maybe you've decided that a proprietary product or large language model is the right choice (or you already have one). There is still quite a bit that your agency can do!

Some options are:

- Continue to request information from your vendors throughout a contract's duration.
- Embed green practices across the organisation. The Green Software Foundation's **Sustainable Organisational Framework for Technology (SOFT)** provides a methodology and decision tree for organisations to embed, transform and use software emissions data in pursuit of net-zero targets, drawing on GSF's standards, tools and patterns.
- Employ measurement practices on your end. Some of the tools made available to developers can also be used by your IT teams throughout the product's operation. The resources on this page are accessible starting points.
- Talk to other municipalities about their sustainable AI practices. They might use similar products and have access to more information that could still be helpful.

CHECK OUT:

- ☐ Services exist that can measure the carbon emissions from your internal use of cloud infrastructure and AI. Examples include **Tailpipe** and **Green Pixie**.
- ☐ **CodeCarbon** and **Carbon Tracker** run background software in your ICT systems to estimate power consumption.
- ☐ **Green Algorithms** and **ML CO2 Impact** offer calculators working with information about the hardware, locations, and platforms of your AI tools.
- ☐ The Green Software Foundation's **Carbon Aware SDK** and **Impact Framework** are open-source, ratified projects that IT teams can deploy to measure emissions across their software estate and shift workloads to cleaner energy.

Some agencies are building bespoke AI tools in-house. When doing so, your IT teams will benefit from reviewing the developer-facing resources in Step 2a.

Step 4: Encourage thoughtful and responsible use of AI across agencies

Implementing energy efficiency at the initial moment of procurement (i.e., when deciding which systems to buy) is the best way to yield energy savings. However, the aggregate impact of individual actions still makes a difference.

CHECK OUT:

The government of San Francisco has a great guide for **Greener Generative AI Assistant Tool Use**. Their tips include keeping prompts and outputs short, limiting media-heavy tasks, and optimizing cloud storage.

Step 5: Go above and beyond

These suggestions are just a starting point. Incredible work is being done to minimize the impact of ICT infrastructure on planetary resources, and there are exciting opportunities to innovate across the entire AI supply chain. You can spend more time with the resources contained in this handbook to find out how to:

- **Address water usage.** Tools for **water efficiency measurement** and management are increasingly available to developers.
- **Address the product's supply chain.** The well-established **Greenhouse Gas Protocol** can support emissions measurement across a product's entire value chain (i.e., Scope 3 emissions).
- **Address specific data center impacts.** Some tools make it possible to identify the data centers servicing a company, enabling a far more accurate sense of localized impacts on water, land, and energy.The Green Software Foundation's **Real-Time Cloud standard** collects this data.
- **Talk to experts.** The **Green Web Foundation** and **Green Software Foundation** offer consulting services and referrals, including personalized advising and free courses.
- **Take stock of your agency's approach to AI.** The resources on Frugal AI, above, integrate multiple aspects of equity and responsibility in AI deployment. For example, the **Frugal AI Hub** at Cambridge University promotes four holistic factors: resource efficiency; sustainability; accessibility and inclusion; and impact and scalability.

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