AI Energy reporting - which bits are mandatory, and which bits are voluntary?

This is a public document set up by Chris Adams at the Green Web Foundation, to make it easier to understand which parts of the recently passed EU AI Act are likely to result in disclosure about the energy usage requirements of various models.

This is a public google doc with comments enabled, and it will be updated as I learn more, but once I feel I know enough, I'll put the summary onto an easier to read and share url - Chris

Relevant links

[The original linkedIn post asking this question](#) - see this for responses which are collated in edited form here

[The legally binding text of the EU AI act as passed on EUR Lex](#) - the official site of EU laws

[Link to artificialintelligenceact.eu](#) - an unofficial converted version of the EU AI Act text, converted to HTML, with helpful links to specific sections

Link to a [personal blog post from Chris Adams exploring why reporting inference *and* training might both be mandatory](#).

Which bits are mandatory?

Article 53 - Obligations for providers of general-purpose AI models

1. Providers of general-purpose AI models shall:

- (a) draw up and keep up-to-date the technical documentation of the model, including its training and testing process and the results of its evaluation, which shall contain, at a minimum, the information set out in Annex XI for the purpose of providing it, upon request, to the AI Office and the national competent authorities;
- (b) draw up, keep up-to-date and make available information and documentation to providers of AI systems who intend to integrate the general-purpose AI model into their AI systems. Without prejudice to the need to observe and protect intellectual property rights and confidential business information or trade secrets in accordance with Union and national law, the information and documentation shall:
    - (i) enable providers of AI systems to have a good understanding of the capabilities and limitations of the general-purpose AI model and to comply with their obligations pursuant to this Regulation; and
    - (ii) contain, at a minimum, the elements set out in Annex XI

ANNEX XI - Technical documentation referred to in Article 53(1), point (a) — technical documentation for providers of general-purpose AI models

Section 1

Information to be provided by all providers of general-purpose AI models

The technical documentation referred to in Article 53(1), point (a) shall contain at least the following information as appropriate to the size and risk profile of the model:

- 1. A general description of the general-purpose AI model including:
    - (a) the tasks that the model is intended to perform and the type and nature of AI systems in which it can be
    - integrated;
    - (b) the acceptable use policies applicable;
    - (c) the date of release and methods of distribution;
    - (d) the architecture and number of parameters;
    - (e) the modality (e.g. text, image) and format of inputs and outputs;
    - (f) the licence.

- 2. A detailed description of the elements of the model referred to in point 1, and relevant information of the process for the development, including the following elements:

- ○ (a) the technical means (e.g. instructions of use, infrastructure, tools) required for the general-purpose AI model to be integrated in AI systems;
  - ○ (b) the design specifications of the model and training process, including training methodologies and techniques, the key design choices including the rationale and assumptions made; what the model is designed to optimise for and the relevance of the different parameters, as applicable;
  - ○ (c) information on the data used for training, testing and validation, where applicable, including the type and
  - ○ provenance of data and curation methodologies (e.g. cleaning, filtering, etc.), the number of data points, their scope and main characteristics; how the data was obtained and selected as well as all other measures to detect the unsuitability of data sources and methods to detect identifiable biases, where applicable;
  - ○ (d) the computational resources used to train the model (e.g. number of floating point operations), training time, and other relevant details related to the training;
  - ○ (e) known or estimated energy consumption of the model.

- With regard to point (e), where the energy consumption of the model is unknown, the energy consumption may be based on information about computational resources used.

Which bits are voluntary?

Article 95 - Codes of conduct for voluntary application of specific requirements

1. The AI Office and the Member States shall encourage and facilitate the drawing up of codes of conduct, including related governance mechanisms, intended to foster the voluntary application to AI systems, other than high-risk AI systems, of some or all of the requirements set out in Chapter III, Section 2 taking into account the available technical solutions and industry best practices allowing for the application of such requirements.

2. The AI Office and the Member States shall facilitate the drawing up of codes of conduct concerning the voluntary application, including by deployers, of specific requirements to all AI systems, on the basis of clear objectives and key performance indicators to measure the achievement of those objectives, including elements such as, but not limited to:

- (a) applicable elements provided for in Union ethical guidelines for trustworthy AI;
- (b) assessing and minimising the impact of AI systems on environmental sustainability, including as regards energy-efficient programming and techniques for the efficient design, training and use of AI;

- (c) promoting AI literacy, in particular that of persons dealing with the development, operation and use of AI;
- (d) facilitating an inclusive and diverse design of AI systems, including through the establishment of inclusive and diverse development teams and the promotion of stakeholders' participation in that process;
- (e) assessing and preventing the negative impact of AI systems on vulnerable persons or groups of vulnerable persons, including as regards accessibility for persons with a disability, as well as on gender equality.

3. Codes of conduct may be drawn up by individual providers or deployers of AI systems or by organisations representing them or by both, including with the involvement of any interested stakeholders and their representative organisations, including civil society organisations and academia. Codes of conduct may cover one or more AI systems taking into account the similarity of the intended purpose of the relevant systems.

4. The AI Office and the Member States shall take into account the specific interests and needs of SMEs, including start-ups, when encouraging and facilitating the drawing up of codes of conduct.