

On the legal reusability of public data in Europe

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To-do list

For this iteration:

- rework complex **diagrams** for 16:9 format, add captions, import as vector art
- possibly group open license recommendations in a **table**

Abstract

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Energy system analysts working in Europe and elsewhere have begun the long journey toward establishing a knowledge commons for the energy sector. The advantages of a having single, virtual, maintained, shared, and coherent data basis for system analysis are self-evident. The entire undertaking is nonetheless predicated on being able to source legally unencumbered public data from official sources.

This presentation examines the legal status of public data in Europe under current conditions. Key legislation like the database directive 96/9/EC, the open data directive 2019/1024, and prevailing copyright law are examined in the context of this emerging knowledge commons. And the picture that emerges is far from encouraging. Despite its name, the open data directive does not support genuinely re-usable data, the database directive remains an impediment, the legal status of material under statutory reporting is general compromised, and the legal status of public sector entities is often not discernible.

The solution advocated here is to press for public information providers to deploy Creative Commons CC-BY-4.0 licenses on primary data and CC0-1.0 public domain dedications on the associated metadata and cataloging information.

The underlying problem is essentially this. European legislators cannot decide whether to make public sector information genuinely open and reusable — or instead reserve this information in encumbered form to fuel an emerging data market offering saleable information products and services.

The collateral damage from this implicit policy is high and is significantly inhibiting efforts by energy system analysts to articulate and evaluate feasible and useful net-zero transitions. Moreover, the analysis undertaken is necessarily less transparent and less robust than it could or should be.

The current legal status of public sector information and information under statutory reporting is all the more disappointing because legislators could solve many of issues raised with the stroke of a pen, should they so wish. This presentation therefore offers a list of specific actions in this regard.



Preamble

Health warning!

In respect of intellectual property held in common, there is little to draw upon in terms of:

- supportive legislation
- case law
- official interest
- academic analysis

Some background

- 1990 : began campaigning on global warming
- 1992 : joined the Sustainable Energy Forum, Aotearoa/New Zealand
- 1995 : began modeling energy systems at high-resolution
- 2003 : added the GPL-2.0 license to *deeco* and attempted to build an online community
- 2016 : joined the Open Energy Modelling Initiative (openmod)
- 2017 : joined the Free Software Foundation Europe (FSFE) Legal Network
- 2022 : pushing for International Energy Agency (IEA) data to be made open

- coordinated five written submissions on data law reform in Europe:¹
 - revised Public Sector Information (PSI) directive
 - proposed Data Act
- provided oral representations once in Brussels
- have been in court twice for public interest cases

¹ Available from the openmod forum, try filtering on: <https://forum.openmod.org/tag/public-consultation>

Context

Public data

This presentation covers **non-personal data** that can be or has been **legitimately published** — hence with reference to the following classes of information:

Excluded:

- personally identifiable information (PII)
- confidential commercial information
- trade secrets
- consortium data and brokered data — so-called “shared” data

Included:

- material under statutory reporting — noting that most mandates seek to address system stability and market failure and none currently seek to advance sustainability
- collaborative projects leveraging citizen science:
 - OpenStreetMap — ODbL-1.0 license
 - Wikidata — CC0-1.0 license

Open data

"Open definition" — OKF short-form

Open data is data that can be freely used, re-used and redistributed by anyone — subject only, at most, to the requirement to attribute and sharealike

Notes: ¹

- “attribute” can refer to the Creative Commons BY component
- “sharealike” can refer to the Creative Commons SA component ²

Long-form open definition available at:

- Open Knowledge Foundation (no date). Open Definition 2.1 — Defining open in open data, open content and open knowledge. *Open Knowledge Foundation (OKF)*. Cambridge, UK.

¹ See also the “open data” category on the openmod forum (circa 50 threads): <https://forum.openmod.org/c/open-data>

² The associated CC-BY-SA-4.0 license is not generally recommended for data. Indeed no sharealike licenses are.

Legal scope

Most remarks here pertain to **European Union law** in aggregate — noting that while EU directives are necessarily transposed into national law, the resulting legislation is not explicitly harmonized

Areas of law:

- law on **intellectual property rights** (IPR) — the focus here
- law of **contracts** – although not in the United Kingdom¹
- law on **business wrongs** (torts) — not discussed further here
- law covering **injunctions against intermediaries** — those providing portals²

¹ United Kingdom contract law requires a reciprocal consideration (such as a payment) for a contract to form and therefore explicit contact between the licensee and licensor — the other branches of law apply in the UK notwithstanding

² No United States §230 “safe harbor” provision in Europe

Technical scope

My remarks are limited to the **energy sector** and further restricted as follows

Included:

- datasets comprising primary observations
- curated datasets — implies some form of oversight
- conventional data manipulation — perhaps using SQL ¹
- conventional statistical analysis — perhaps programmed using R ²

Excluded:

- machine learning systems — such as GitHub Copilot (for source code admittedly)
- exceptions under copyright law for scientific research and similar activities — instead general reusability is sought

¹ SQL or structured query language is a declarative language that operates on relational databases

² R is a statistical computing language

Research trends

Generalizing somewhat, but **energy system researchers**:

- often work in **legally risk averse** environments
- are adopting **open science** doctrines, including **strict reproducibility**
- increasingly work with **bespoke software**
- are starting to recognize the benefits of **collaborative development** for software and data
- are normally **highly reliant** on what the European Commission describes as:

privately-held information [of] public interest

The proposed Data Act addresses the final point in the context of business-to-government (B2G) transfers — how much of that material will be consolidated and anonymized and offered for wider consumption remains to be seen

But all too often . . . data harvesting is quick and dirty



Representative community projects

Here are some dedicated community projects in the energy sector centered on data management and increasingly looking toward linked open data (LOD):

Europe:

- Open Energy Platform (OEP) — also strong focus on semantics and technical standards
- Open Power System Data (OPSD) — pulls from the ENTSO-E Transparency Platform¹

United States:

- PowerGenome — pulls from the Public Utility Data Liberation (PUDL) project and US EIA

See also Wikipedia on [Open energy system databases](#)

¹ The portal indicates that users wishing to republish original or modified datasets should seek permission from the “primary data owner” — a term defined in regulation 543/2013 without reference to which intellectual property rights that might apply as follows at §2.23: “ ‘primary owner of the data’ means the entity which creates the data”

Ultimate goal is a knowledge commons

This presentation assumes the objective is to create a **knowledge commons** comprising:¹

- fully usable and re-usable data
- community curation — **canonical** data²
- consensus semantics
- underpinning standards that are free
- necessarily distributed architectures and linked **open** data (LOD)

Free standards and open standards differ:

- **free standards** are published under CC-BY-4.0 and MIT together³
- so-called **open standards** can be proprietary and made available under FRAND terms
- FRAND = fair, reasonable, and non-discriminatory → say €2000 license fee

¹ Hoyer-Klick, Carsten, Johannes Frey, Ulrich Frey, Hedda Gardian, Anastasis Giannousakis, Jan Göpfert, Tobias Hecking, Christian Hofmann, Sophie Jentzsch, Kevin Knosala, Leander Kotzur, Stefan Kronshage, Patrick Kuckertz, Christoph Muschner, Michaja Pehl, Vera Sehn, and Detlef Stolten (28 October 2021). *Implementing FAIR through a distributed data infrastructure*. Germany: DLR *et al.* Parallel session presentation to EMP-E 2021 online conference, 28 October 2021, 14:00–15:30 CEST.

² Speculative terminology: primary observations → canonical data → downstream or application datasets

³ The MIT license provides a patent grant which CC-BY-4.0 alone does not

Intellectual property law

IPR that does not require examination, grant, and payment (unlike trademarks and patents)

Copyright

- a legally sanctioned time-limited private monopoly right
- general copyright — was developed for literary works and extended to other media
- special case legislation too — the legal protection of computer programs for example
- so-called moral rights apply in Europe — such as the right to be associated with the work

Database protection

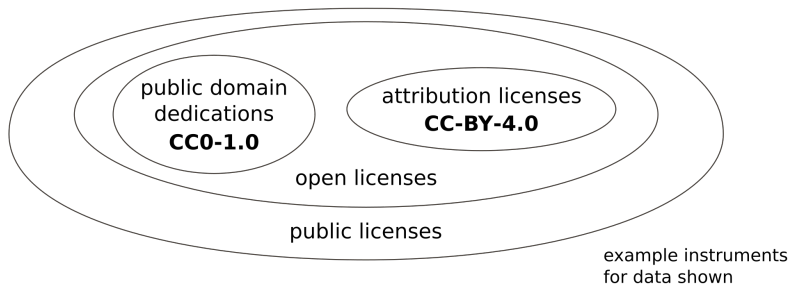
- database directive 96/9/EC introduced in 1996
- covers the European Economic Area (EEA) and post-Brexit United Kingdom
- intended to safeguard a fledgling computer database industry
- set within wider aspirations to expand the market for information products and services
- no equivalent legislation in the United States, despite several attempts
- widely disliked today

Intellectual property held in common

No legislative support whatsoever for intellectual property held in common

This led to third-party **public licenses** to provide the necessary permissions and restrictions:

- first for software : GNU GPL family in 1989
- later for data : the Creative Commons family from version 4.0 being data-capable



Public sector information in Europe

Public sector information (PSI) is covered by the **open data directive** 2019/1024 (ODD)

- ODD built on earlier legislation
- intended to enable better use of information generated by “public sector bodies”
- public sector bodies can no longer claim 96/9/EC database protection (§1.6)
- research data from universities now covered under the rubric of “open access”¹

Identifying a **public sector body** is more difficult and restrictive than one might imagine:

- ENTSO-E — the transmission system operators umbrella organization — for instance?²

¹ Under ODD recital 27, the term “open access” is “understood as” free-of-charge online access “without restrictions on use” beyond optionally the need to acknowledge — also a considerably more liberating treatment of the term than often found

² ENTSO-E was established under regulation 714/2009 concerning conditions for access to the network for cross-border exchanges in electricity

Definition §2.11

"'re-use' means the **use** by persons or legal entities of documents held by ..."

This remapping of "re-use" → "use" is doubtless **problematic**:

- "use" is a well understood and well delineated concept within intellectual property law
- the right granted to "use" **does not provide the general right to copy and republish** in original or modified form — those particular activities lie well outside documented exceptions under European law or affirmative defenses under fair use in the United States

My interpretation therefore:

- the concept of "re-use" in the ODD is **restricted to the first hop** from the PSI provider
- **no rights are granted to copy and republish that material** in original or modified form
- entirely counter to established norms for "open data" (see Open Knowledge Foundation)

The wider policy setting

Clear tensions between:

- the current drive to create a European **data market** for data products and services¹
- growing interest in creating a European **digital commons** of sorts

France, who holds the current EU presidency from 2022, recently indicated a desire to establish a “digital commons” (emphasis added)²

*The digital commons utilize an **open approach** and are based on the **collective control** and use of data and technological infrastructure.*

¹ The proposed Digital Markets Act, scheduled for 2023, represents one current iteration

² French Embassy (7 February 2022). France calls for a European initiative for digital commons. *France in the UK*. London, United Kingdom.

Legal issues and examples

Data object for analysis

To assist with analysis, one type of **transactional object** is mooted for discussion:

Plain text tabular dataset

- a collection of observed atomic items: namely numbers or facts
 - an associated schema — implied or explicit
 - and perhaps accompanying metadata — ideally employing a standard vocabulary¹
 - entirely **passive** and **human readable** using a text editor
-
- hence consider a one file OKF **frictionless data package** comprising:²
 - plain text CSV tabular data
 - YAML or JSON-specified table schema and information on CSV dialect
 - accompanying metadata, also notated in YAML or JSON
 - possibly compressed using the `gzip` utility

¹ Perhaps the DCAT data catalog vocabulary and/or the Dublin Core Metadata Element Set (DCMES) as appropriate

² Frictionless data website: <https://specs.frictionlessdata.io>

Copyright for collections of atomic data

Consider our entirely passive plain text **tabular dataset** from a copyright perspective:

- it classes as a **collection** (or compilation) of non-copyrightable elements: the **atomic data**
- may have multiple **creators** whose contributions cannot be distinguished: **joint authorship**
- may have been modified or combined with other datasets: thus a **derivative work**

To attract copyright in its own right, normally:

- real **humans** must have generated the contents
- some minimum **threshold of originality** must have been reached or exceeded
- the above doctrine naturally excludes **trivial works**
- **no protection** when originality is insufficient — and that includes public sector information

The threshold of originality varies by legal jurisdiction and evolves with case law. Under Germany law, copyright attaches to a collection if and only if (emphasis added) (UrhG §4.1):

*the “**selection and arrangement**” of the elements is sufficiently creative*

Copyright and AI

This question will doubtless surface — interested readers are thereby referred to:

- Hugenholtz, P Bernt and João Pedro Quintais (1 October 2021). “Copyright and artificial creation: does EU copyright law protect AI-assisted output?”. *International Review of Intellectual Property and Competition Law*. **52** (9): 1190–1216. ISSN 2195-0237. doi:10.1007/s40319-021-01115-0. Open access.

Copyright revisited — and our tabular dataset

Copyright in a collection as per our minimal tabular dataset is **unlikely** for energy sector data — but we just don't **know** for sure

- our tabular dataset would doubtless count as a collection under copyright law
- whether it meets the threshold of originality is another matter
- some public data is read from SCADA systems or market clearance and dispatch algorithms
- other public data comprises entirely routine lists of information such as physical assets
- I would guess most examples do not reach the threshold of originality for protection
- unrelated creative material can be payloaded in to ensure copyright protection ¹

¹ Osborn, Lucas S (2017). “The limits of creativity in copyright: digital manufacturing files and lockout codes”. *Texas A&M Journal of Property Law*. 4: 25. The practice of including creative material to trip copyright is known as adding “lockout codes”.

Database directive 96/9/EC — overall character

General:

- also known as a “related right” (regarding copyright) or “sui generis” (one of a kind) right
- directive adopted in 1996 and subsequently implemented in national legislation
- the legal protection covers the database but not its contents
- the definition of a database is wide (emphasis added):

*a collection of independent works, data or other materials arranged in a **systematic or methodical way** and **individually accessible** by electronic or other means*

Noting that:

- any computer program used to generate the database is excluded from this protection
- an analog object, such as a mass-printed topographical map, can class as a database¹

And also:

- material served under statutory reporting is **not** expressly excluded by law

¹ Schweizer, Mark (5 November 2015). C-490/14 — Verlag Esterbauer: Get off my map!. *The IPKat*. London, United Kingdom.

Database directive 96/9/EC — criteria for protection

Two-step requirement:

- for protection — the direct **investment** must be substantial
- for infringement — the **extraction** must be substantial

Noting that:

- the investment criteria is restricted to the database and excludes its contents¹
- recent case law tentatively limits protection to providers facing commercial risk²
- databases provided by public sector bodies now expressly excluded by the ODD

Case law on these and related matters is slowly emerging — but most is commercial, not public interest, in nature

¹ European Court of Justice (9 November 2004). *Judgment of the Court (Grand Chamber) of 9 November 2004 — Case C-203/02 — ECLI:EU:C:2004:695*. Kirchberg, Luxembourg: European Court of Justice (ECJ). Judgment counter to published opinion of Advocate General Stix-Hackl. The co-called BHB case.

² Giannopoulou (2018:106) (reproduced at end as ancillary material)

96/9/EC database protection — interpretation

96/9/EC database protection is our **Achilles heel** — users simply cannot know where the legal thresholds for individual portals might lie

- indeed our tabular dataset would comply with the definition of a 96/9/EC database
- the focus here is mostly directed toward official sites
- it is not possible for users to estimate “substantial” extraction
- the scope of a set of databases can be strategically manipulated to maximize protection¹

¹ Davidson (2008)

Problematic examples

ENTSO-E Transparency Platform

- mandated under regulation 543/2013 but legally encumbered information nonetheless
- openmod people have pushed for change over several years but no real movement ¹
- status of ENTSO-E as public sector body has not been clarified by the organization

Open Power System Data (OPSD) portal

- community site: <https://open-power-system-data.org>
- draws from ENTSO-E Transparency Platform
- site carries caveat about need to seek permission for re-use from the “primary data owner”

Statutory reporting by **European Energy Exchange** (EEX)

- information displayed on website cannot be downloaded or even highlighted and copied ²
- Agency for the Cooperation of Energy Regulators (ACER) says practice is fully compliant

¹ Those involved include LHi, ES, IS, TB, myself

² This kind of disablement can be implemented using CSS or JavaScript

databases in general

simple collections

ineligible for copyright

- data is not defined in the UrhG but the database directive 96/9/EC recital (17) suggests that data is a low-level atomic concept like a number or fact
- data is deemed ineligible for copyright due to its omission from §2(1)

a collection of computer programs is colloquially a software package and a collection of data is colloquially a dataset

standalone works

- §69a(1) defines a computer program as a program "of any form" and includes drafts and preparatory design material
- although not explicitly stated, a computer program can comprise source code or compiled software or both

standalone works may also be written, musical, pantomimic, artistic, photographic, cinematographic, and illustrative

Notes

- all concrete entities are eligible for copyright; if sufficiently creative, with the exception of data – this includes collections, database works, and databases
- nesting is supported, thus catering for (1) database works containing collections of data and (2) collections containing multiple database works
- for background, see the Wikipedia article titled "UML class diagram"

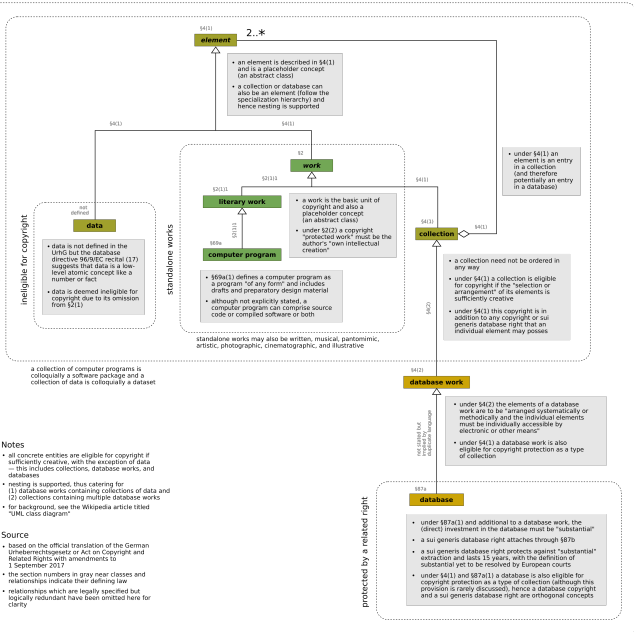
Source

- based on the official translation of the German Urheberrechtsgesetz or Act on Copyright and Related Rights with amendments to 1 September 2017
- the section numbers in gray near classes and relationships indicate their defining law
- relationships which are legally specified but logically redundant have been omitted here for clarity

the legal concept of a database exists solely within the European Union

protected by a related right

- under §87a(1) and additional to a database work, the (direct) investment in the database must be "substantial"
- a sui generis database right attaches through §87b
- a sui generis database right protects against "substantial" extraction and lasts 15 years, with the definition of substantial yet to be resolved by European courts
- under §4(1) and §87a(1) a database is also eligible for copyright protection as a type of collection (although this provision is rarely discussed), hence a database copyright and a sui generis database right are orthogonal concepts



Recap — main legal concepts

Copyright for a **collection** applies when (Germany copyright act):

the "**selection and arrangement**" of the elements is sufficiently creative

The **threshold of originality** varies by jurisdiction:

sweat-of-the-brow (UK) → non-trivial creativity → individual character required (AT)

The definition of a **96/9/EC database** as follows:

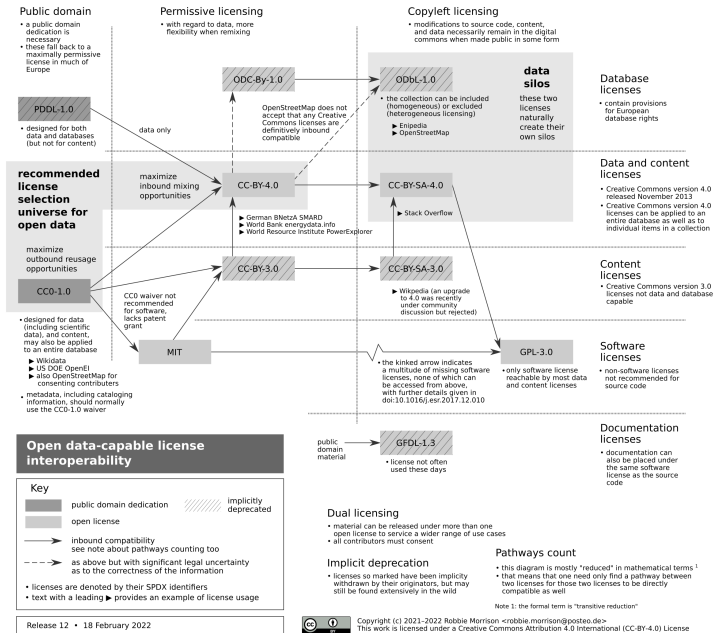
"a collection of independent works, data or other materials arranged in a **systematic or methodical way** and **individually accessible** by electronic or other means"

The thresholds for **substantial investment** and **substantial extraction** remain unclear — although case law suggests exposure to commercial risk may be required

Both types of property right attach automatically and must be **explicitly removed** through either public licensing or official notice

Choice of open license

Just briefly ...



Stepping back

From a perspective of energy systems analysis

Legislative issues:

- the definition of “re-use” covering **public sector information** is entirely deficient
- a **public sector body** can be hard to identify when non-traditional
- almost all current **statutory reporting** is potentially legally encumbered ¹

Technical issues

- most energy sector datasets unlikely to be sufficiently original to attract copyright ?
- databases established by statute unlikely to retain 96/9/EC protection if brought to court ?

Looking forward

- the push by France for a European digital commons may work in our favor if accompanied by suitable licensing ?

¹ Exceptions include the BNetzA SMARD portal under CC-BY-4.0 and the French RTE portal under CC-BY-4.0

The tragedy of the anticommons

The **tragedy of the anticommons** is a type of coordination breakdown, in which a commons does not emerge, even when the general access to resources or infrastructure would be a social good (*source*: Wikipedia)

Indeed, the idea of a genuine **knowledge commons** to serve public interest analysis does not seem to come easily to legislators

Rather, supplying an emerging **data market** with potentially non-reusable public sector information would appear to be uppermost in mind

Solutions

Explicit open licensing on datasets / portals / data standards

In **most cases**, open licenses do not provide users with **permissions** — because the underlying material is not intrinsically protected — but they do provide users with **legal certainty**

Datasets

- primary data under CC-BY-4.0
- metadata, including cataloging information, under CC0-1.0

Data portals

- portals under CC-BY-4.0 to explicitly remove 96/9/EC protection

Data standards

- open license data standards under CC-BY-4.0 and MIT — the latter for patentable material
- consider public funding to buy out the copyright on key standards

My wish list for the European Commission

Looking to the horizon, the **European Commission** should:

- help repair the open data directive 2019/1024 — particularly the definition for “re-use”
- expand the rationale for statutory reporting to include the rapid transition to a more sustainable society — and make that reporting genuinely accessible and re-usable by law
- develop legislative support for open intellectual property — covering both code and data — thereby removing much of the need for the current raft of both community and official third-party public licenses offering second best solutions
- buy out the copyrights for key data standards — and make them available as free standards
- analyze community and official public data license compatibilities (as per earlier digraph diagram) — a task requiring painstaking legal scrutiny

"Data leakage" to United States servers

If suitable open licensing is not forthcoming, published PSI datasets will doubtless “leak” to public-interest data portals located in the United States and be granted CC-BY-4.0 or similar:

- Mireille van Eechoud (2021:378) covers this scenario and opines that the proposed Data Governance Act lacks clarity in respect of public sector information ¹
- such “data leakage” already occurs — the US-based World Resources Institute (WRI) republishes datasets drawn from the ENTSO-E Transparency Platform and serves them under CC-BY-4.0 licensing

In the absence of so-called “adequacy requirements”, the location of the server determines the intellectual property law that applies. And United States law in respect of datasets and databases is comparatively lax and neither class of object in this context are likely to attract IPR protection. ²

¹ At the time of writing, that Data Governance Act has yet to be formally approved

² US Copyright Office (November 2017). *The Compendium of US Copyright Office Practices — Third edition: Chapter 700*. US Government. Refer §727 and specifically §727.1

Data reusability is a legal swamp that the EC can help fix



Reference matter

Abbreviations

ACER	Agency for the Cooperation of Energy Regulators
CSV	comma-separated values
DCMES	Dublin Core Metadata Element Set
DG	European Union Directorate-General
EC	European Commission
ECJ	European Court of Justice
EEA	European economic area
EEX	European Energy Exchange
EIA	US Energy Information Administration
FRAND	fair, reasonable, and non-discriminatory
IEA	International Energy Agency
IPR	intellectual property right
JSON	JavaScript Object Notation
LOD	linked open data
ODD	open data directive 2019/1024
OEP	Open Energy Platform
OKF	Open Knowledge Foundation
openmod	Open Energy Modelling Initiative
OPSD	Open Power System Data
PSI	public sector information
PUDL	Public Utility Data Liberation project
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency
SCADA	supervisory control and data acquisition
SPDX	Software Package Data Exchange (provides unique public license identifiers)
UrhG	Urheberrechtsgesetz (German copyright act)
YAML	yet another markup language (a human-readable data-serialization language)

Selected legislation

- European Parliament and European Council (27 March 1996). “Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases”. *Official Journal of the European Union*. **L 77**: 20–28. Established so-called *sui generis* database right.
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- European Commission (8 December 2011). “Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (text with EEA relevance)”. *Official Journal of the European Union*. **L 326**: 1–16. Established Regulation on Wholesale Energy Market Integrity and Transparency (REMIT).
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- European Commission (26 June 2019). “Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (recast)”. *Official Journal of the European Union*. **L 172**: 56–83. Replaced an earlier public sector information directive.

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Some readings / 3

- van Loenen, Bastiaan, Glenn Vancauwenberghe, and Joep Crompvoets (editors) (2018). *Open data exposed*. The Hague, the Netherlands: TMC Asser Press. ISBN 978-94-6265-261-3. doi:10.1007/978-94-6265-261-3.
- Morrison, Robbie (6 February 2022). *Which open data license? — Release 06*. doi:10.5281/zenodo.5987672. 14 pages. CC-BY-4.0 license.
- Stepanov, Ivan (2 January 2020). “Introducing a property right over data in the EU: the data producer’s right — an evaluation”. *International Review of Law, Computers and Technology*. **34** (1): 65–86. ISSN 1360-0869. doi:10.1080/13600869.2019.1631621. Open access.

Thanks for your attention



Ancillary material

European Union definition for open data

From the open data directive as a recital as opposed to definition §2.11 in the main body:

Open data directive 2019/1024 — Recital 16 ¹

"open data as a concept is generally understood to denote data in an open format that can be freely used, re-used and shared by anyone for any purpose"

¹ European Commission (26 June 2019). "Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (recast)". *Official Journal of the European Union*. **L 172**: 56–83.

Giannopoulou (2018:106)

The Database Directive does not clearly indicate the exclusion of public databases that fall under the PSI Directive from qualifying for the sui generis protection. In principle, since public sector databases are not excluded, branches of state power can benefit from the sui generis right protection when they fulfill the conditions.[36] Absent an ECJ decision, however, courts from some Member States have ruled against the possibility of public bodies asserting sui generis database rights. Namely, courts in Italy and Germany have held that even if public sector databases qualify for the protection, they should be exempt from it.[37] The highest administrative court in Amsterdam has held that the City of Amsterdam cannot hold sui generis rights on a database even if it has made a substantial investment towards its creation because the has not borne the risk for the investment in question.[38] Thus, it cannot impose limitations or charges in the reuse of that database. Finally, French law has been amended [39] to clarify that public bodies cannot invoke a sui generis right in order to refuse the reuse of their data.

Giannopoulou, Alexandra (2018). *Chapter 6: Understanding open data regulation: an analysis of the licensing landscape*. In Bastiaan van Loenen, Glenn Vancauwenberghe, and Joep Crompvoets (editors) (2018). *Open data exposed*. The Hague, the Netherlands: TMC Asser Press. Pages 101–125. ISBN 978-94-6265-261-3. doi:10.1007/978-94-6265-261-3_6. The analysis above predates the open data directive 2019/1024.

Free and open standards in general

What are the legal requirements on unencumbered standards:

- US Supreme Court 2021 ruling on reimplemented public APIs that “fair use” applies irrespective but silent on whether copyright attached

Google LLC v Oracle America, Inc. Docket no. 18-956. Decided 5 April 2021.

Photographs

Beaver damage in Berlin

- description: Beaver damage along the Spree, Moabit, Berlin, Germany
- timestamp: 2021-12-11 11:23:51+00:00
- lat/lon: +52.5178 +013.3309
- conditions: Sony ILCE-6600 ■ 15mm (35mm equivalent) ■ ISO:100 1/80 f4.5
- photographer: Robbie Morrison
- image: STR04207.JPG

Swamp in Spandau

- description: Teufelsbruch wetland, Spandauer Forst, Spandau, Berlin, Germany
- timestamp: 2021-02-28 10:45:51+00:00
- lat/lon: +52.5796 +013.1994
- conditions: Sony ILCE-6600 ■ 15mm (35mm equivalent) ■ ISO:100 1/60 f4.0
- photographer: Robbie Morrison
- image: STR05750.JPG

Garlic mustard close-up

- description: Garlic mustard (*Alliaria petiolata*) [Knoblauchrauke], Brandenburg, Germany
- timestamp: 2021-05-29 08:24:22+00:00
- conditions: Sony ILCE-6600 ■ 45mm (35mm equivalent) ■ ISO:125 1/60 f4.0
- photographer: Robbie Morrison
- image: STR08402.JPG

