

Closing the Time Gap: Bureaucracy as the Key to the Green Transition

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Executive Summary

While all permitting processes present challenges, environmental permitting is widely recognized as the most complex and time-consuming due to its technical demands, regulatory fragmentation, and the high stakes of environmental protection. Across Europe and the United States, both public authorities and project developers face significant delays in the rollout of a wide variety of projects that may have environmental impact. Environmental assessments and permitting typically take between 2 to 8 years, severely hindering the rapid implementation of for instance renewable energy infrastructure.

This whitepaper argues that digitizing bureaucratic processes, combined with embedded AI, offers an effective and responsible approach to reducing processing times without compromising quality or regulatory compliance. Based on documented experiences from Denmark, we present a solution model that can be transferred and adapted to the needs of other public authorities.

1. The Problem: A Procedural Bottleneck in the Green Transition

Climate change demands immediate action. Its effects are cumulative, meaning the timing of our response is critical. Delays in environmental approvals have tangible consequences for CO2 reduction and energy security. Analyses show that the average environmental assessment takes 2–4 years in the U.S. as an example. These timeframes are incompatible with political ambitions for a swift green transition.

A key challenge is the complexity of environmental assessments, which must account for a wide range of environmental, health, and legal factors. Furthermore, cases are handled inconsistently depending on the individual caseworker, local practices, and data availability. This results in inconsistency, low transparency, and a high rate of back-and-forth iterations.

2. Analysis: Why Does It Go Wrong?

Environmental permitting processes are inherently complex. They involve a wide range of considerations including biodiversity, water quality, air pollution, cultural heritage, and climate impacts. To ensure a sound decision-making basis, assessments often require input from multiple agencies and stakeholders. This complexity makes it difficult to establish uniform practices, especially when cases are handled in fragmented organizational structures.

Another major issue is the handling of data. Applications typically consist of hundreds of pages of free-text documentation with no standardized structure. As a result, caseworkers must manually comb through large amounts of text to identify relevant issues. The absence of structured metadata not only hampers day-to-day operations but also limits opportunities for analysis, learning, and process improvement.

Additionally, many authorities lack adequate process support. In practice, workflows are often

governed by fragmented tools (like email) and manual procedures, with no formalized or digitally embedded rules. This places a heavy burden on individual employees to interpret and implement regulatory requirements consistently. The consequence is inefficiency, variability in decision-making, and strong reliance on institutional memory and key personnel.

Together, these factors lead to extended processing times, high resource consumption, and increased risk of procedural errors, which will produce a whole new set of complaints and case re-evaluations. When approvals are delayed, critical energy and infrastructure projects are put on hold, which presents a risk we cannot afford.

3. The Solution Digital Bureaucracy and Embedded AI

The Danish Environmental Protection Agency has adopted a best-practice approach to digital case handling using the cBrain F2® platform and the “Digital Bureaucracy” methodology. This enables standardized process support with clearly defined workflows and real-time data structuring during case handling. The result is increased efficiency, transparency, and the ability to integrate with external services such as GIS.

At the same time, the use of embedded AI has demonstrated significant potential. When AI solutions are integrated directly into the case management system, they gain awareness of the specific type of case, its stage in the process, and relevant contextual data. This allows the AI to provide tailored decision support. For instance, it can flag missing considerations, such as groundwater protection, directly in an application and highlight them for both the applicant and the caseworker. It can also identify and compare precedents from previous decisions, improving consistency and professional accuracy.

The results from Denmark speak for themselves: a documented 12% reduction in case handling time, increased quality and consistency, and a more robust data foundation for further analysis and policy development.

4. Benefits

Digitizing bureaucratic processes and embedding AI into case handling offer several key benefits. These include significantly shorter processing times, greater consistency and transparency in decision-making, and the creation of a reliable, reusable data foundation. Additionally, structured data and AI support enhance the ability to learn from precedents, leading to more informed and efficient workflows across public administration.

5. Perspective Bureaucracy as a Strategic Asset

A modern, digital bureaucracy should not be seen as a barrier, but as an enabler. When processes are transparent, structured, and digital, they allow for:

- Faster implementation of political decisions
- Improved coordination between authorities (e.g., via GIS integration and status sharing)
- Fairer and more traceable decisions

There is no need to reinvent the wheel. The Danish experience demonstrates that it is possible to implement a standardized solution that can be configured to local needs and scaled internationally

6. Conclusion and Recommendations

Conclusion

Bureaucracy is not the enemy. Instead, it is the key to unlocking climate action. With digital process support and embedded AI, public administration can streamline workflows without compromising on quality, compliance, or public trust.

Recommendations for Decision-Makers

1. Prioritize investment in digital process infrastructure as part of climate policy
2. Mandate structured data handling in all environmental application processes
3. Use AI to support, not replace, professional judgment
4. Establish governance frameworks and embed them in your systems to ensure transparency and accountability
5. Build on proven best-practice solutions instead of developing from scratch

**We have the technology.
We have the methodology.
Now it's time to execute.**

By digitizing and standardizing bureaucratic processes, we can accelerate the green transition while simultaneously improving the quality and transparency of public administration.

cBrain® offers a validated, configurable, and secure platform that supports the entire permitting process, from initial application to final decision, and is already in use in practice.

*For more information,
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