Essay

The German Bundestag and Synthetic Biology: Legal Provisions, Problems and Future Prospects

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STATUTORY DECLARATION
1. Abstract

“From its definition as a new technology to policy makers drafting laws to control the exchange of genetic materials, international policy impacts synthetic biology.”1 It is particularly important, especially in the field of synthetic biology in its capacity as an emerging discipline, to consider existent laws and rights but also to push forward the policymaking in any way possible. This is also why “iGEM has become more involved in the international conversation surrounding synthetic biology”2, participating for example “in UN events including the Convention of Biological Diversity (COP / MOP) and the World Health Organization Assembly”3. In the context of iGEM’s “After iGEM”-program, Team Franconia in the iGEM 2017 competition was constituted of students of many different and diverse disciplines, ranging from “classic” iGEM fields such as biology and chemistry through web design and informatics to marketing, linguistics and – finally also – political science. Throughout the process of the team’s 2017 project, students of different disciplines grew together, working more and more in an interdisciplinary manner with the knowledge of every team member adding up to a more overall synopsis of the project embedded in the human practice projects surrounding it and in the field of synthetic biology in general. At the end of the team’s project, after having attended the 2017 Giant Jamboree, stands now the scientific evaluation of what – politically speaking – is possible or can or cannot be done in the field of synthetic biology in Germany and how the situation will be improved in the near future. To present a more complete or rather a compact but also at the same time as much universal as possible overall view of the situation in Germany, this essay will initially expound a cursory synopsis of the political system of the Federal Republic of Germany, concentrating on the Bundestag as the country’s parliament and general lawmaking institution. The scope of this essay is not to present a detailed and profound description of Germany’s political system and processes of lawmaking which is why a focus will lie on the work of The Office of Technology Assessment at the German Bundestag” or short and hereinafter the “TAB”. In the TAB’s Working report no. 164

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2 ibid.
3 ibid.
(in the following referred to as “WR164”)\(^4\), the first ever guidelines for synthetic biology in the Federal Republic of Germany have been constituted. In the subsequent part of this essay general legal provisions as suggested by the TAB will be reviewed and further problems and future prospects will be discussed in general. In a concluding summary at the end, a compact and concise overview of the current state of synthetic biology in the Federal Republic of Germany will be presented.

2. The German Bundestag and synthetic biology

2.1 Functional classification of the Bundestag in the context of Germany’s political system as a whole

To understand more profoundly the TAB’s mandate in Germany’s political interplay and to make tangible what effects suggested legal provisions by the TAB can have in the reality of German everyday politics, it is advantageous knowing about the basic functionalities of the Bundestag. Shortly, due to the scope of this essay, only the main tasks of the Bundestag will be listed and explained in the following. The Bundestag, embedded in Germany’s parliamentary democracy, fulfills four basic assignments:

(1) “Er [the Bundestag] ist es, der die personelle Besetzung aller anderen zentralstaatlichen Organe direkt oder indirekt vornimmt, teilweise mit Vertretern anderer Organe (Wahlfunktion).”\(^5\)

The German Bundestag holds the election function (1): The composition of all other central government organs is determined by the Bundestag’s direct or indirect vote, sometimes in cooperation with other political institutions.

(2) “Seiner Kontrolle unterliegt das Regierungshandeln (Kontrollfunktion).”\(^6\)

Furthermore, the Bundestag is required to control government action which is specified as its controlling function (2).

(3) “Ihm obliegt, bei Mitwirkung des Bundesrats, die Gesetzgebung (Legislative Funktion).”\(^7\)


\(^6\) ibid.

\(^7\) ibid.
The Bundestag’s most important capacity is the legislative function (3).

(4) “Er soll den im Volke vorhandenen Meinungen Ausdruck geben (Artikulationsfunktion).”

Lastly, the fourth function of the Bundestag is the articulation function (4): As the only political institution at federal level being elected directly by the people it is democratically legitimized and bound to speak and act in the name of the people – which is also why it holds the above-mentioned quantity and quality in assignments and tasks. Following the scope of this essay, a focus has to be set on the third function. As a scientist, respectively as a (synthetic) biologist in Germany, wanting to influence legislation regarding specific scientific fields, it is important to know how the Bundestag – playing a crucial role in the law-making procedure in the Federal Republic – is handling decisions pertaining science. From an “After iGEM”-perspective, this might seem like a plethora of levels beneath what in that regard has been described as “International Policy”. The importance of this national point of intersection between science and politics against the backdrop of the reality of politics and policies regarding everyday scientific research on the other hand is impossible to be denied. In a next step, the particulars of the aforementioned point of intersection will be examined.

2.2 The Office of Technology Assessment at the German Bundestag (TAB) – an overview

In Germany, this “point of intersection” appears in the form of the Office of Technology Assessment at the German Bundestag (TAB) which operates under instruction of the Committee on Education, Research and Technology Assessment (ABFTA). The TAB “is an independent scientific institution which advises the German Bundestag and its committees on questions of scientific and technological change.”¹⁰ The institution is scientifically legitimized through its independent, scientific sponsorship by the Institute for Technology Assessment and Systems Analysis (ITAS) of the Karlsruhe Institute of Technology (KIT) since 1990¹¹. Since September 2013 the KIT is also collaborating

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⁸ ibid.
⁹ cf. Rudzio 2011, p. 209
¹⁰ cf. WR164
¹¹ cf. ibid
with other partners. As a result, the TAB is the number one place to go regarding contact and dialogue between science and politics. Following the scope of this essay and the “After iGEM”-program, a short description of the TAB’s working report on synthetic biology, which was released in November 2015, shall be given in a next step.

2.3 TAB’s Working report no. 164 – a summary of pertinent issues throughout the report

TAB’s working report no. 164 can be used as reference on how the German Bundestag with its associated panels (ABFTA and the TAB) work with scientific subject-matters. Naturally, in the framework of this essay, no extensive examination of the document at hand can be administered. The scope of this essay being to form an overall perspective of the situation, however, makes a thorough unveiling of every detail of the TAB’s working report obsolete, which is why in a next step only its key contents will be compiled. The TAB acknowledges the characteristics of synthetic biology, laying in the redesigning of natural organisms in far reaching ways, with the overall aim of creating artificial biological systems in the future. The TAB also recognizes the great number of prospects in applications synthetic biology has to offer in the fields of chemical and energy production, environmental protection and the medical sector. A crucial part which runs through the text as a whole is the TAB’s notion, respectively the TAB’s estimation, that, because products and procedures of synthetic biology are “still at the beginning of their development, their potential safety-relevant properties such as toxicity, allergenicity, proliferation properties , and ability to survive in the environment [are] widely unknown.” The TAB also looks at synthetic biology from an industrial standpoint: stakeholder involvement is an important part of science. In a final step the TAB also advises caution to the subject of intellectual property and also, throughout the report, biosafety.

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12 ibid.
13 WR164, p. 2f.
14 WR164, 4ff.
15 WR164, p. 7
16 WR164, p. 8ff.
2.4 Problems and future prospects – iGEM and the “After iGEM”-program as future perspectives

The TAB is convinced that in the future risk assessment and evaluating modified organisms will require new methods of political clarification. In contrast, the TAB sees the biggest problem in the fact, that synthetic biology right now is still only in an emerging state, which makes it difficult and somewhat impossible to legislate. This can be seen as one of the reasons why the “After iGEM”-program is of great importance as not only being open for dialogue but actually starting dialogues is a scientist’s very important task. It is also apparent that, although the German political system offers a wide variety of options regarding scientific policymaking, synthetic biology in the TAB’s working report no. 164 was not seen as pioneering as it could be. Furthermore being mixed with DIY biology and not being devoted a separate report does not signal the awareness of German policymakers of synthetic biology as a promising chance for future. The situation can and should definitely be improved. Communication is key: iGEM offers everyone a great chance to spread the ideas of synthetic biology and also to educate the public. Human Practice projects continue to be of great relevance in that context. To continuously advance synthetic biology is also one of the most important iGEM tasks – as scientific policymaking grows easier the more the topic at hand is clear and transparent. Moreover, the “After iGEM”-program is a relevant part of how everyone, even students, can influence how synthetic biology is being handled by policymakers.

3. Concluding synopsis

In Germany, the Bundestag is the main lawmaking institution, which is why establishments such as the TAB help them with questions and decisions that they cannot decide by themselves. This approach is a very sensible one. Regarding the point of intersection between politics and science, iGEM and the “After iGEM”-program offer a great inception to study current circumstances. International Policy is important, but more important for students and teachers worldwide is to gain experiences concerning

\[17\] cf. WR164, p. 8f.
local structures and procedures and learn how to influence the relationship between politics and science by themselves – for instance through the “After iGEM”-program.
REFERENCES


STATUTORY DECLARATION

I declare that I have authored this essay independently, that I have not used other than the declared sources / resources, and that I have explicitly marked all material which has been quoted either literally or by content from the used sources.

Wendelstein, Dec. 11, 2017

M.M.

place and date

signature