

What is “The Bioeconomy to 2030”?

Given the right circumstances, the biosciences could produce the next wave of innovation in products and services across a range of economic activities in health, agriculture, industry and energy. This could transform the way people produce and consume over the next decades. As the biosciences advance, it may be possible to deliver new high quality health care in the form of medicines and therapies which will address longstanding chronic disease patterns, lifestyle and longevity. In the field of agriculture, bioscience developments could help provide food and help solve a number of broader socio economic problems for the estimated 9 billion inhabitants of tomorrow’s world by increasing yields, incorporating nutrients into foodstuffs, decreasing chemical and pesticide use, and using less water. Industrial biotechnology techniques are being developed which could produce plastics from crops, polymers from plants, and new microbial processes that will replace expensive and polluting chemicals. Bioenergy, produced from biomass and perhaps other more exotic sources such as oceanic microbial and bio-voltaic processes, may also make an impact in reducing countries' reliance on foreign energy sources and dependence on fossil fuels. Tomorrow may see a world of biologicals as today we see society driven by digital technologies.

What is the possible scope?

- Healthcare, regenerative medicine, enhancement, reproductive technologies, genomic medicine
- Food, value added food, nutrigenomic, food safety
- Agriculture, GM crops, GM livestock, DNA diagnostics, biopharming
- Biofuels,
- Industrial biotechnology, enzymatic processing in manufacturing, waste management, fibre production
- Security: biometrics, biosensing technologies, forensic science applications

Who are the “customers”?

Governments, the private sector, and the civil society are primary customers for this work. What public investments need to be made in the coming decades to prepare the bio-economy of tomorrow? What technical challenges need to be met through basic research? What regulatory issues need to be addressed in advance of product developments? What IPR issues lie in the way of a broader adoption of the technologies? Business is also a customer. The bio industries, growing stronger every day, need the support of both the government and public opinion to advance the products in the market. A better understanding of the trade-offs, risks, and opportunities for the new bio-economy are essential for business to expand their investments, direct their innovative research and market their products. Lastly, civil society is a major stakeholder – how do we ensure that developments in the biosciences will go hand in hand with society’s acceptance?

What are the broader goals, timeframe and outcomes of the project?

The project is a two year effort. Total funding is in the range of 1,75 million euros (depending upon launching delay/costs and options for high level events at the end of the project). Short term goals: inventory and assess the economic, social and societal claims for the bioeconomy of tomorrow with a view to framing the policy choices/decisions in the near future for governments. Medium term goals: to position the OECD in the debate and work on the bioeconomy, and in particular to prepare and support the creation of a Biotechnology Committee in the STI which would, in the manner of the ICCP, tackle the various strains of policy research and decision making which will be necessary to drive these new innovations. OECD can and should position itself to be the forum of choice for policy discussions on the bioeconomy, given its ability to metric and assess new developments, and at the same time use these assessment tools to underpin international agreement on definitions, data frameworks, and research studies.

Who else is looking at the “bioeconomy” as a concept?

The primary proponents of the bioeconomy come from two sets of players: innovation, research and technology ministries of governments, which have developed pilot studies on selected aspects of the bioeconomy; and industrial organisations such as EuropaBio, Japan Biotechnology Association, and BIO in the US. A number of partial studies have appeared recently, particularly on industrial biotechnology and health biotechnology. Some “future watch” organisations have also turned to this concept. OECD remains a strong player, due to the more than twenty years of work on biotechnology in the Organisation. We are world leaders in several areas (for instance, bio safety).

What value added in the IFP/OECD?

OECD's IFP acts as a pathfinder to explore new issues, provide first initiatives for policy framework development, and propose new rules of the game. In the case of the bioeconomy, the IFP can bring real, measurable results to the development of a conceptual framework for measuring the bioeconomy, assessing its impact upon our economies and societies, developing a “forward agenda” for policy research within the framework of an in house Committee (in STI). In addition, as a non-partisan player, we have the confidence of government, industry and to some extent, NGOs to convene, evaluate and plan for the next wave of innovation being created by developments in the biosciences. The project will seek funding and association from all of these stakeholders. As a global policy institution with outreach to all sectors of the economy, we are uniquely placed to develop a solid basis for policy discussions among stakeholders in the future – identifying winners and losers in this “creative destruction” and developing policy strategies to ensure the chance for these technologies to provide better futures for all citizens.

Who might fund the project?

We will be seeking funding from industry (sectors of pharma, food, energy, industry, waste management, security), and from government agencies and ministries. For that purpose, we have completed a scoping document (some thirty pages divided into seven sections addressing the scope and rationale of the project, the outcomes, a survey of recent work in the field, identification of other major players, identification of relevant work/players in OECD and a short annotated bibliography of recent work).