

DRAFT

LCFS Sustainability Principles, Criteria, Indicators

Principles 4, 5, 6, 7

Staff at the Air Resources Board (ARB) has drafted criteria and indicators for four principles that the Low Carbon Fuel Standard (LCFS) Sustainability Workgroup has discussed to date; they include Conservation and Biodiversity, Soil, Water, and Air. Staff will continue to work with the Sustainability Workgroup on these four principles and to develop similar criteria and indicators for the remaining eight principles. Staff's intention was to capture the most important concepts for each principle and describe with some detail the requirements of the responsible operators from the farm level to the biofuel producer. We will continue to work on developing ideas for incentives, reporting, and other important topics related to LCFS sustainability provisions.

The Sustainability Workgroup listed the following twelve principles:

Principles

1. Legality
2. Planning, monitoring, and continuous improvement
3. GHG emissions
4. **Conservation and biodiversity**
5. **Soil**
6. **Water**
7. **Air**
8. Use of technology, inputs and management of waste
9. Human and labor rights
10. Rural and social development
11. Local food security
12. Land rights

Principle 4: Conservation and Biodiversity

Biological diversity is conserved or enhanced by protecting land with high biodiversity value or high carbon stock and avoiding negative impacts from biomass production and biofuel operations.

Responsible Operators: Feedstock Producer, Feedstock Processor, Biofuel Producer

- 4.1 A good practices environmental management plan (part of Principle 2) is implemented that includes practices that conserve or enhance biological diversity.
 - 4.1.1 Conservation values within areas of biomass/biofuel operation are identified through an environmental impact assessment, and the protection of those areas is established.
 - 4.1.2 The responsible operator uses maps and databases to help identify conservation values.
 - 4.1.3 If the impact assessment identifies areas where biomass/biofuel production directly affects ecosystem functions and services, the responsible operator shall show that practices are in place to mitigate negative impacts (e.g. creation of riparian buffer zones, maintenance of natural barriers or hedgerows, etc.)
 - 4.1.4 Fragmentation of habitats is minimized by the protection, restoration, or creation of ecological corridors and buffer zones.
- 4.2 No areas defined as nationally or internationally as protected or classified as High Conservation Value (HCV) areas shall be used after _____ unless legally authorized. (Refer to www.hcvnetwork.org)
 - 4.2.1 Biomass production in areas of high biodiversity is avoided.
 - 4.2.2 Biomass production on grassland with high biodiversity is avoided.
 - 4.2.3 Forest conversion to plantations or non-forest land uses is avoided.
- 4.3 The status of rare, threatened, and endangered species and their habitats are identified and their conservation taken into account in management plans and operations.
 - 4.3.1 The responsible operator shows compliance with all national and local laws protecting the conservation of rare, threatened, or

endangered species or habitats and takes effective steps to maintain conservation of those areas.

- 4.3.2 The responsible operator shows that the management plan considers rare and endangered species that may be outside of the geographic area of biomass/biofuel operations but have migration or travel routes that cross into the area of biomass/biofuel operations.
- 4.3.3 The responsible operator shows that measures are in place that manage hunting, fishing, trapping, ensnaring of rare and endangered species in areas of biomass/biofuel operations.
- 4.4 The use of exotic species are monitored and controlled. The risk of invasive species invading areas outside the operation site is minimized.
 - 4.4.1 The responsible operator shows that no species identified as noxious or highly invasive or which is officially prohibited nationally will be used at the biofuel operation sites (e.g. using the CALWEED database or Global Invasive Species database)
 - 4.4.2 The responsible operator shows that if invasive species are found, the management plan identifies measures to mitigate and control the invasion.

Principle 5: Soil

Soil quality is maintained or improved by minimizing erosion and promoting healthy biological systems and chemical and physical properties.

Responsible Operator: Feedstock Producer

- 5.1 An environmental management plan (part of Principle 2) is implemented that includes an impact assessment and practices that prevent or reverse soil degradation over the long term. Nutrient levels of soil or plants and soil are assessed and monitored. Erosion is avoided and field travel zones are limited.
 - 5.1.1 The environmental management plan shall include practices to maintain and improve nutrient levels, soil pH, soil organic matter, soil biodiversity, avoid compaction and prevent salinization of the soil. The responsible operator assesses and monitors nutrient levels of the soil to improve soil health and uses soil maps where available.
 - 5.1.2 The responsible operator shows that practices/techniques to reduce or avoid erosion are understood and in place (e.g. organic direct planting, permanent soil cover, crop rotation, terracing, etc.)
 - 5.1.3 The responsible operator shows that the use of agricultural and forestry residues are not used at the expense of improved soil health and soil productivity.
 - 5.1.4 None of the chemicals recorded in the World Health Organization's (WHO) 1a, 1b, or 2 lists should be used.
 - 5.1.5 The responsible operator shows compliance with local laws and regulations with respect to waste storage and handling.

Principle 6: Water

Water quality and quantity of surface and groundwater shall be maintained or improved while respecting water rights.

Responsible Operator: Feedstock Producer, Feedstock Processor, Biofuel Producer

- 6.1 An environmental management plan (part of Principle 2) shall be developed and implemented that includes an assessment of the potential impacts on water quality and quantity from biomass/biofuel operations.
 - 6.1.1 Water used for biomass/biofuel production shall not be withdrawn beyond replenishment capacity of the water table.
 - 6.1.2 The responsible operator shall provide evidence that the water management plan identifies any negative impacts resulting from biomass/biofuel operations on water resources and that they are mitigated.
 - 6.1.3 Irrigation is carried out responsibly and according to best management practices (BMPs) or legislation.
 - 6.1.4 In drought-prone areas, irrigation shall not be used unless evidence is shown that water used for biomass/biofuel operations does not deplete the natural water table levels.
 - 6.1.5 The responsible operator shall provide evidence that BMPs are applied that reduce water use and maintain and improve water quality (recycling, waste storage handling, waste discharge, fertilizer use).
 - 6.1.6 The responsible operator shall perform an annual review of the management plan and report on its effectiveness.
 - 6.1.7 The responsible operator shows compliance with local laws and regulations with respect to waste storage and handling.
- 6.2 Both formal and customary water rights are respected.
 - 6.2.1 The water management plan shall assess whether biofuel operations negatively affect the water supply of the local communities and ecosystems that rely on that water and identify any mitigation measures.

- 6.3 Pursuant to Principle 1 (Legality), responsible operator shall obtain and comply with applicable water use and discharge permits from local, regional, state, and/or federal agencies.

Principle 7: Air

Air pollution from biofuel production shall be minimized.

Responsible Operators: Feedstock Producer, Feedstock Processor, Biofuel Producer

- 7.1 A good practices environmental management plan (part of Principle 2) is implemented that includes minimization of air pollution emissions.
 - 7.1.1 The responsible operator shows that air pollutants released from the biomass/biofuel operations are identified and a mitigation plan is in place.
- 7.2 The responsible operator shows that open-air burning as part of land clearing or waste disposal is avoided.
 - 7.2.1 National interpretation should identify any specific situations where such use of fire may be acceptable, for example through reference to ‘Guidelines for the implementation of the ASEAN policy on zero burning’, or comparable guidelines in other locations.
- 7.3 Pursuant to Principle 1 (Legality), responsible operator shall obtain and comply with applicable air pollution permits from local, regional, state, and/or federal agencies.