

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 [and ecosystem functions and services](#).
- 4.1.1 Conservation values [of local, regional or global importance](#) 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 [and consultation with national and regional experts](#) to help identify conservation values.
- 4.1.3 If the impact assessment identifies areas where biomass/biofuel production directly affects [conservation values of local, regional or global importance and ecosystem functions and services](#), the responsible operator shall show that practices are in place to mitigate negative impacts [and conserve or enhance these values](#) (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 a~~ Areas defined as [“no-go areas” below nationally or internationally as protected or classified as High Conservation Value \(HCV\) areas](#) shall ~~not~~ be used [for biomass production](#) after ~~January 1st, 2009~~ unless legally authorized [as part of a conservation management plan for the area](#). [\(Refer to www.hcvnetwork.org\)](#).
- 4.2.1 ~~Biomass production in a~~ Areas of high biodiversity ~~is avoided~~.
- [4.2.2 Old growth and late successional forests](#).

Comment [D1]: This is the RSB date. EU RED has a January 2008 date.

Formatted: Superscript

Comment [D2]: Move this reference to glossary.

Formatted: Indent: Left: 1", Hanging: 0.5"

~~4.2.42~~ Biomass production on grassland that is not degraded and maintains the native species composition and ecological characteristics and processes of the native grassland ecosystem. with high biodiversity is avoided.

4.2.5 Wetland that is covered with or saturated by water permanently or for a significant part of the year.

4.2.6 Peatland that was undrained as of January 1st, 2008.

4.2.7 Protected areas or agricultural conservation lands, including but not limited to any area designated by federal or state governments for conservation purposes, such as Wilderness or Wilderness Study Areas, old-growth forests, Inventoried Roadless Areas, or aquatic buffers, except for invasive alien species and for material whose removal is necessary to protect public health and safety.

~~4.2.3 Forest conversion to plantations or non-forest land uses is avoided.~~

4.3 Areas that contain identified conservation values of global, regional or local importance or that serve to maintain these values shall not be converted to biomass production after the 1st of January 2009, or earlier as prescribed by other relevant international standards. These areas may only be used if adequate management practices maintain or enhance the identified values (e.g., sustainable biomass harvesting).

4.3.1 Forested areas of native species exhibiting natural composition and structure (natural forests) should not be converted to plantations or simplified, intensively managed or cultivated systems, or non-forest uses.

4.43 The status of rare, threatened, and endangered species and their habitats are identified and their conservation taken into account in management plans and operations.

4.43.1 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.~~

4.4.2 Lands identified at the federal or state level as harboring any species classified as endangered, rare, or threatened at the global, national, or state level, or is a candidate for such status, should not be used for biomass production except where material removal is required for restoration of the species habitat and protection of the species.

Comment [D3]: Date complies with EU RED
Formatted: Superscript
Formatted: Font: (Default) Arial
Formatted: Default
Formatted: Font: (Default) Arial, 12 pt

Formatted: Superscript

Formatted: Font: (Default) Arial
Formatted: Indent: Left: 1", Hanging: 0.5"
Formatted: Indent: Left: 1"
Formatted: Font: 12 pt

Formatted: Font: (Default) Arial
Formatted: Default
Formatted: Font: (Default) Arial, 12 pt
Formatted: Font: (Default) Arial, 12 pt

4.4.33.2 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 ~~use cross into~~ the area of biomass/biofuel operations.

4.4.43.3 The responsible operator shows that measures are in place that ~~manage prohibit~~ hunting, fishing, trapping, ensnaring of rare and endangered species in areas of biomass/biofuel operations.

4.54 The use of exotic species are monitored and controlled. The risk of invasive species invading areas outside the operation site is minimized.

4.54.1 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)

4.5.2 The responsible operator shows that feedstock selection processes includes a weed risk assessment to identify the potential threat of invasion for species not officially identified as noxious or highly invasive. If the weed risk assessment demonstrates that a species is highly invasive, then that species shall not be used.

4.54.32—The responsible operator shows that if ~~invasive~~ species are found ~~to be invasive~~, 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 (e.g., roads) 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 prepares and implements written guidelines to control erosion, minimize forest damage during harvesting, road construction, and all other mechanical disturbances.

5.1.43 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.

5.1.54 None of the chemicals recorded in the World Health Organization's (WHO) 1a, 1b, or 2 lists should be used.

5.1.65 The responsible operator shows compliance with local laws and regulations with respect to waste storage and handling.

Formatted: Space After: 0 pt, Line spacing: single, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers

Formatted: Font: (Default) Arial, 12 pt

Formatted: Font: (Default) Arial, 12 pt

Formatted: Font: (Default) Frutiger-LightCn, 10 pt, Font color: Custom Color(RGB(35,31,32))

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.

Comment [D4]: Seems like this belongs in Principle 2 and would apply to all sustainability principles.

- 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.

- 7.1.2 The responsible operator insures that facilities are not contributing to greater air pollution per unit of energy produced than would result from the energy source they replace or compete with, including, for example, NOx, VOCs, and PM, and do not increase local community exposure to such pollutants.

- 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.

Formatted: Font: (Default) Arial

Formatted: Default

Formatted: Font: (Default) Arial, 12 pt

Formatted: Font: (Default) Arial, 12 pt

Formatted: Font: 12 pt

Formatted: Default, Indent: Left: 0", First line: 0"