

GUIDELINES FOR SUBMISSION OF PETITIONS FOR DESIGNATION OF ALTERNATIVE FUELS UNDER EPACK SEC. 301(2)

Background

This document provides guidance on petitioning the U.S. Department of Energy (DOE) to designate fuels as alternative fuels for purposes of programs authorized by Titles III, IV, and V of the Energy Policy Act of 1992 (EPAct).¹ Sec. 301(2) of EPAct lists such "alternative fuels" and also provides DOE authority to designate additional fuels if it finds that they are "substantially not petroleum and would yield substantial energy security benefits and substantial environmental benefits."

Sec. 301(2) of EPAct states that the Secretary of Energy must determine by rule if a fuel meets the Act's criteria. Therefore, fuels can only be designated through a formal rulemaking process in accordance with the Administrative Procedures Act (APA) (5 USC § 553). EPAct does not specifically mention any rights of petitioners to have fuels designated; nor does it refer to any process for them to obtain such designations. APA provides parties the right to petition for issuance of a rule (5 USC § 553(e)). Rulemaking procedures, however, often involve substantial investments of resources by the responsible agencies; considerable evidence is required to make the requisite statutory findings to promulgate regulations. DOE has substantial discretion to decide whether to undertake such rulemakings and commit the resources to carry them out. Rulemakings must follow the same procedural requirements and afford the same rights to all affected parties irrespective of whether the rulemaking is initiated in response to a petition from a private party or undertaken at the agency's own initiative.² (See section below on Understanding the Rulemaking Process with process-flow diagram.)

Under the APA, parties may submit whatever petitions they choose in whatever form they choose. To convince DOE that a rulemaking is warranted, however, it may be helpful to understand DOE's perspective on such designations based on its experience reviewing previous petitions as well as with EPAct programs generally. While these guidelines are advisory only, they may enable prospective petitioners to better prepare petitions for designation as well as to decide whether their efforts would be worthwhile.

Objectives of Petition

The purpose of the petition is to persuade DOE that a rulemaking exercise for possible designation of a fuel would be worthwhile. It is not expected that a petition will include all data ultimately necessary throughout the rulemaking process. In many cases, special data requirements may be determined during the rulemaking process, for example, through comments by other interested parties. Petitioners should recognize, however, that DOE may designate fuels only if

¹ Public Law 102- 486.

² Various parties have confused the sec. 301(2) designation process with production registration processes such as EPA fuel/fuel additive registration , EPA pesticide registration, and FDA registration of drugs, medical devices, and food additives. Rulemaking is fundamentally different from such registrations in a number of ways, including openness, equal rights of all parties, and greater agency discretion whether to undertake the process.

solid evidence and reasoning is available to sustain findings regarding the sec. 301(2) criteria. DOE must be able to back up such findings with an adequate quantity and quality of data that provides statistical reliability across the potential fuel/vehicle combinations that would be allowed under a designation.³ The spectrum of energy security and environmental impacts must be considered to assure that any claimed benefits are ultimately "net" overall benefits. In cases where existing data allows significant uncertainty regarding overall benefits, the statutory presumption is clearly against designation. DOE has no responsibility to generate the relevant data on its own and lacks the resources to do so. Thus, while the original petition is unlikely to include all data ultimately needed, the likelihood of successfully persuading DOE to undertake a rulemaking largely rests on the extent to which a petition convincingly demonstrates that an adequate body of data does exist. It can do this either by including the data along with the petition or by citing other publicly available sources of such data. (As will be described below, however, such data is not the only factor determining whether DOE will undertake a rulemaking.)

Eligibility for Designation

A number of minimum criteria can be applied to determine if a candidate fuel even qualifies for consideration.

First, EPAAct sec. 301(2) provides that "*fuels*" may be designated by DOE. It can be seen from the term "fuel" as well as from the list of fuels listed as alternative fuels in the statute ("natural gas," "ethanol," "methanol," etc.) that what is intended is designation of generic fuels. Proprietary formulations, trade names or other company/product specific designations are inappropriate as bases for federal regulations.⁴

Second, the fuel should offer the promise of making a substantial impact and be of interest to various parties, including potential suppliers and users. Inherent in the two "substantial benefits" criteria is the notion that the fuel has adequate market potential to make substantial impacts. Moreover, DOE's limited resources available for such rulemakings do not allow it to devote the necessary effort on exercises without potential for significant impact.⁵

Third, a key factor in DOE's decision whether to commit the necessary resources to a rulemaking is whether the candidate fuel is intended for use in specially designed "alternative fuel vehicles." The programs affected by the alternative fuel designations deal exclusively with alternative fuel vehicles. DOE's regulation defines "alternative fuel vehicle" to include only "dedicated vehicles"

³ For example, merely citing a limited number of tailpipe emissions tests would clearly be inadequate to show environmental benefits.

⁴ This does not imply that the existence of patents relating to a particular fuel or its production process would render the fuel ineligible for alternative fuel designation. Any such proprietary rights should derive from the patent itself, not the proposed designation, which should be stated in generic terms that assure meeting the statutory criteria. Sec. 301(2) designations may not be used to create forms of intellectual property where none otherwise exist.

⁵ Again, the mere existence of patents relating to a fuel does not necessarily disqualify it on this ground since such patents could be available for licensing to any interested producers. Moreover, patents on certain formulations or process innovations do not necessarily preclude other production of generic fuels. However, while DOE is not competent to judge the validity of patents, it may well consider the likely limiting impact of such patents on widespread production of a fuel in deciding whether to undertake a rulemaking.

and "dual fueled vehicles." "Dual fueled vehicles" are defined (490 CFR § 490.2) to include (1) vehicles that can operate on an alternative fuel and can also (separately) operate on gasoline or diesel fuel (example: CNG/gasoline vehicles); and (2) "flexible fuel vehicles," which are defined as vehicles "engineered and designed to be operated on any mixture of two or more different fuels." Conventional gasoline or diesel vehicles not specifically designed for use with other fuels do not meet the definition of alternative fueled vehicle irrespective of whether they are compatible with certain non-petroleum fuels.

Finally, the fuel must be substantially non-petroleum in content. Unlike the other two statutory criteria for designation, DOE believes that this criterion is fairly straight-forward and means that the fuel must come substantially from sources other than petroleum, which includes conventional crude oil and less conventional forms of petroleum such as oil sands, bitumen, or shale oil. DOE has previously found that non-petroleum content of 60% or more constitutes "substantially not petroleum" but has not yet determined an absolute minimum threshold for this criterion.

Petition Format

Petitions may be submitted in any format. DOE suggests, however, that an appropriate format would be a letter addressed to the Secretary of Energy defining the nature of the designation being sought. Further explanation and supporting data could be provided as attachments to the letter. It would be helpful for the attachment package to include an executive summary, table of contents and an introductory section identifying the petitioner and describing its relationship to the candidate fuel including the current scale of production and market, status of development, and number of producers and users among other data.

Where to Submit Petitions

Petitions for designations of alternative fuels should be addressed and submitted to the Secretary of Energy, Office of the Secretary. For convenience, petitioners may wish to submit a single copy of the petition to the Secretary's Office with two additional copies provided to DOE's Office of FreedomCar and Vehicle Technologies. This program office will have principal responsibility for consideration of such petitions. It will assure that any other DOE offices with interest in the designation are provided copies and consulted.

Addresses:

Office of the Secretary of Energy, 1000 Independence Ave. N.W., Washington, D.C. 20585

Office of FreedomCar and Vehicle Technologies, Attn: Linda Bluestein, Regulatory Manager, EE-2G, 1000 Independence Ave., N.W. 20585. Phone: (202) 586-6116. Email: linda.bluestein@ee.doe.gov.

Defining the Designation Request

Designations under sec. 301(2), as rulemakings, must take the form of regulations to become part of the Code of Federal Regulations (CFR). Therefore, language appropriate to such regulations must be arrived at through the rulemaking. While DOE will ultimately be responsible for drafting such proposed and final rulemaking language, petitions should include a concise statement of

what is being requested as a possible basis for a regulation. The language should define the designation in a way that will assure that the three sec. 301(2) criteria are met. If the generic fuel does not by its nature assure meeting the criteria, proposed specifications (e.g., fuel property, production process, feedstock) should be included to assure that meeting the statutory criteria can be demonstrated by available data and analyses. If designation is requested for a broad class of fuels, it will have to be shown that all fuels within the requested broad range will meet the sec. 301(2) criteria. This means that representative data must be available for the full range or for a clear "worst case" end of the range.

Understanding the Rulemaking/Designation Process

When the DOE program office receives a petition for a sec. 301(2) designation, it normally consults with a technical team of DOE officials, laboratories, and contractors for a preliminary determination about the merits of the petition. If the petition fails to suggest a minimum level of merit, including the eligibility criteria and indications of likely data adequacy, DOE may reject the petition by responding in a letter to the petitioner.⁶ If DOE finds that the minimum conditions are met to initiate a rulemaking, it will open a docket into which copies of the petition and all supporting submissions will be placed and will publish an announcement in the Federal Register. Opening of a docket, however, does not necessarily mean that DOE will proceed with a rulemaking.

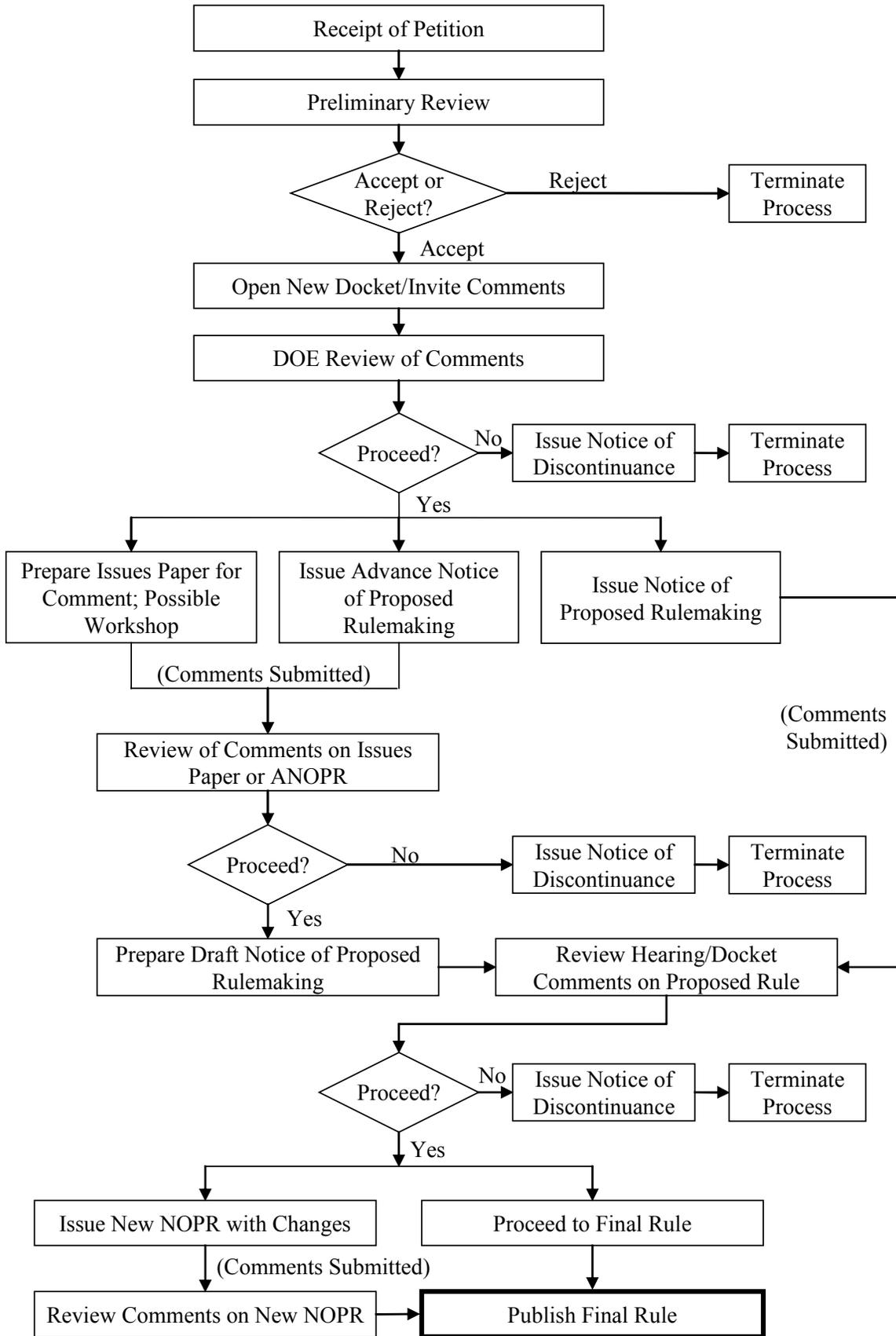
A rulemaking process is by definition and by law a public process in which all potentially affected members of the public have equal substantive and procedural rights. DOE cannot make substantive decisions to adopt regulations without first allowing all interested parties opportunity for comment (5 USC § 553(c)). All substantive communications between DOE and any interested party relative to matters that might be addressed in the rulemaking should be reflected in the docket for public review. Neither petitioners nor other parties should attempt to substantively communicate with DOE "off-the-record" once a petition has been formally filed with DOE.⁷ DOE may not rely in its rulemaking decisions on data or arguments not available for review by the public; thus, parties should refrain from making any submission with content they consider confidential. Preferably, any communications should be in writing with a copy to the docket. In some cases, DOE may agree to have private meetings with petitioners or other parties to discuss issues. Petitioners should expect that minutes of such meetings will be placed in the public docket. These restrictions do not apply to questions regarding process, status, or scheduling.

Once DOE opens a rulemaking docket, it has a number of options for "next steps" to follow depending on the complexity of the issues to be resolved, expected number of interested parties and a variety of other considerations. Figure 1 is a general process-flow diagram showing various paths that a petition and rulemaking decision may take.

⁶ Such a letter can be treated as exhaustion of the petitioner's administrative remedy for purposes of seeking judicial review.

⁷ Potential petitioners requesting informal DOE feedback on the viability of potential petitions or approaches may wish to meet with DOE *prior to* filing such petitions and may wish to provide DOE with drafts of possible petitions before formally filing. Such informal advice should not be treated as official DOE positions, instructions, commitments, etc.

FIGURE I- PETITION/RULEMAKING PROCESS DIAGRAM



Addressing the "Substantial Benefits" Criteria

Petitioners may follow any reasonable approach to demonstrating that the "substantial energy security benefits" and "substantial environmental benefits" criteria are met for a fuel. DOE, however, believes that a number of principles should be reflected in any such approaches.

DOE believes that the concept of "energy security" includes a number of factors such as:

- life cycle efficiency;
- source diversity;
- relative source reliability/risk;
- net petroleum reduction (as proportion of energy provided);
- renewable vs. fossil sources;
- potential scale/duration of availability; and
- potential for market acceptance beyond EPart fleets.

There is no fixed formula for weighting the various factors. Each candidate fuel must be looked at individually in terms of the various factors. It is clear, however, that energy security must be established on an overall, net basis in terms of fuel supply for both the U.S. and the oil importing world as a whole. Fuels which merely segregate specific streams from existing world fuel production without any net overall gain in energy security will not be seen as offering substantial energy security benefits irrespective of the non-petroleum content of the resulting segregated fuel stream. Petroleum reduction should be estimated in proportion to ultimate miles traveled or work performed rather than on a volumetric basis due to differences in energy densities and efficiencies across different fuel/vehicle groups.

Environmental benefits may be claimed from any of a number of environmental media. These might include:

- reduction of global warming potential on life-cycle basis;
- reduction of vehicle criteria emissions;
- reduction of toxicity of emissions;
- improved biodegradability/reduced ecotoxicity; and
- reduction of criteria pollutants from production process.

While the "substantial environmental benefit" may be claimed in any one of these areas or some combination of them, it must also be shown that the candidate fuel will not cause significant adverse impacts in any of the others. DOE does not believe it possible or appropriate to make judgments about one type of environmental benefit outweighing significant detriments of another type. Normally petitions should either (1) describe and quantify all emissions, including greenhouse gas emissions, and any other environmental concerns; or (2) attach or provide adequate citations of existing public sources of such data.

In particular, DOE believes that the EPart sections affected by the sec. 301(2) designation place heavy emphasis on reduction of greenhouse gases. Adequate data will have to be available to estimate life cycle greenhouse gas emissions according to a valid methodology. (DOE believes that currently the most accepted methodology is Argonne National Laboratory's GREET model.) It is very desirable that candidate fuels show a likelihood of overall greenhouse gas reductions and critical that they show no likelihood of significant overall greenhouse gas increases. Like the energy security benefits, the environmental benefits should be shown on a net basis. If use of a candidate fuel by EPart fleets would divert the fuel from other uses, for example,

changes in emission levels caused by the substitution of other fuels to those other uses must be estimated and offset against any emissions benefits claimed in the EPAAct fleets.

While it is up to petitioners to determine what is the most suitable way of demonstrating substantial environmental benefits, DOE believes that generally the requisite evidence it will need to make findings that meet rulemaking standards will involve some combination of:

- scientific principles and reasoning;
- engineering judgment; and
- test data, real world monitoring data, population studies data, etc. adequate to show statistical significance across the relevant spectrum (e.g. range of fuels/vehicles).

The same is true generally for substantial energy security benefits to the extent that the pertinent factors of energy security lend themselves to such data, such as for energy efficiency.

APPENDIX - NOTES ON SOME KEY DATA

Notes on Emission Test Data

To evaluate criteria pollutant impacts, emissions tests should include test fuels reflecting the range of fuel properties to be covered by the designation and a range of vehicle characteristics reflecting the vehicle population in which the fuels will be used. The emission tests should be representative of how the engines would be used. These can be either engine or chassis dynamometer tests. Steady-state tests are of the least value in determining emissions and fuel efficiency impacts. A sufficient number of tests should be included to determine statistically significant results representative of the fleet of vehicles in which the fuel might be used. Durability emissions should also be addressed. Detailed physical and chemical property data should be included for the test and control fuels for which emissions data is submitted.

Notes on Data for GREET Model

To perform a life cycle analysis on the fuel(s) in question and make a determination regarding energy security, DOE should have information on the source of the fuel and any process information used to produce the candidate fuel. To evaluate the energy and greenhouse gas emission impacts of a candidate fuel, information will be needed on:

- feedstock requirement per unit of fuel produced;
- process energy requirements in production plants;
- greenhouse gas emissions from production processes; and
- heating value provided in each unit of fuel.

This information should include energy efficiencies and carbon efficiencies of production plants. If the plants produce other products in addition to the candidate fuel, what is the share of the various products (by weight or volume)? How would the petitioner propose to allocate energy use and emissions between the two products?