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Written Statement

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to appear before you today to testify on the renewable fuel provisions of the Energy Independence and Security Act of 2007 (EISA). I am pleased to state that EPA has signed a notice of proposed rulemaking for the Renewable Fuel Standard included in EISA, commonly called RFS2. Signature of the proposed rule is an important step toward achieving the significant energy security and greenhouse gas (GHG) emission reduction benefits of this program. It also provides EPA an opportunity to present our work to the public and formally incorporate the advice and input we will receive over the coming months.

This proposed rule would revise the current RFS program, established by the Energy Policy Act of 2005, and implement several important changes to these renewable fuel requirements. EISA requires a substantial increase in the volume of renewable fuel and extends the timeframe over which this volume grows. The total volume of renewable fuel must reach 36 billion gallons by 2022. Several specific volume targets must also be met by 2022, including 21 billion gallons of advanced biofuels, comprised of 16 billion

gallons of cellulosic biofuel, 4 billion gallons of "other" advanced biofuels, and a minimum of 1 billion gallons of biomass-based diesel. We estimate that these greater volumes of biofuels will reduce GHG emissions from transportation by an average annualized emissions rate of 150-160 million tons of CO2 equivalent per year--reductions estimated to be equivalent to annual emissions produced by 23 to 24 million vehicles. EPA also has calculated that the RFS2 rule could bring about more than $3 billion in total energy security benefits, displacing an estimated 15 billion gallons of petroleum-based gasoline and diesel, as well as provide an expanded market for agricultural products and open new markets for the development of cellulosic feedstocks.

A central aspect of the RFS2 program is its focus on the lifecycle greenhouse gas impact of renewable fuels. EISA created the first U.S. mandatory lifecycle greenhouse gas (GHG) reduction thresholds for renewable fuels used in the U.S. The statute assigns specific emission reduction thresholds for each of the four categories of renewable fuels required by the Act -- requiring a percentage improvement compared to the baseline lifecycle emissions value for gasoline and diesel used in 2005. EISA requires EPA to look broadly at lifecycle analyses and to develop a methodology that accounts for each of the important factors that may significantly influence this assessment, including both direct and indirect emissions, such as significant emissions from land use changes.

EPA, working with experts from across the Federal government, including experts from the Departments of Agriculture and Energy as well as outside experts, has spent the last year and a half creating a robust and scientifically supported methodology that

identifies direct and indirect emissions, including those resulting from international land use change. This methodology meets our statutory obligations under EISA. Just as importantly, it recognizes that to account for the climate-related effects of renewable fuels, the direct emissions associated with fuel production and combustion as well as the indirect emissions must be taken into account. The United States is committed to combating climate change both at home and abroad. President Obama has called for a domestic cap and trade program which would reduce US emissions by 80% by 2050. We are also actively engaged in working towards a successful outcome at the climate negotiations later this year in Copenhagen. This process will be supported by the President's Major Economies Forum, which seeks to inform and complement the UNFCCC process. The EPA proposed rule provides an important step in advancing the science behind measuring greenhouse gas emissions from biofuels production and use. Comprehensive and science-based lifecycle analysis provides the very foundation upon which the climate benefits of the RFS program are realized.

Another reason why indirect emissions are important to identify is that, according to our analysis in the proposed rule, these impacts comprise a significant portion of the total lifecycle emissions of biofuels. Not including or addressing indirect emissions due to land use changes would ignore a large part of the greenhouse gas emissions associated with different fuels, and would result in a greenhouse gas analysis that bears little relationship to the real-world emissions impact of the fuels. Nevertheless, we understand that some have concerns that the state of the science regarding the assessment of GHG emissions related to international land changes is so immature, and potentially subject to

error, that EPA should disregard or deemphasize such emissions, and calculate renewable fuel lifecycle GHG emissions assuming that there are no GHG emissions associated with predicted international land use changes. We believe such an approach would introduce far more error into lifecycle GHG assessment than the EPA proposal, which is based on reasoned application of the best available science and data. The result of disregarding land use changes would be to ignore the developing science in this area, and to overstate, perhaps dramatically, the GHG benefits of renewable fuels.

However, we recognize that it is important to address questions regarding the science of measuring indirect impacts, particularly on the topic of uncertainty. For this reason, we have developed a methodology that uses the very best tools and science available, utilizes input from experts and stakeholders from a multitude of disciplines, and maximizes the transparency of our approach and our assumptions in the proposed rule.

On the first point, our analysis relies on peer-reviewed models, including comprehensive agricultural sector models such as the Food and Agricultural Policy Research Institute (FAPRI) model that have been used widely to analyze the impacts of numerous agricultural sector policies including recent farm bills. We also have used the most current estimates of key trends in agricultural practices and fuel production technologies and have reviewed the growing body of literature on lifecycle analysis and indirect land use change.

Our work with experts and stakeholders has involved extensive coordination in the development of our methodology and selection of inputs and models. For example, my staff met frequently with the Departments of Agriculture and Energy to share our analytical plan, request feedback on our key assumptions, and provide preliminary results as they became available. In many cases, we adopted the inputs and assumptions suggested by these Departments. For example, we have used Department of Agriculture models and corn yield forecasts. To coordinate key components of our work, we have met on a regular basis with other key constituents including renewable fuel producers, petroleum refiners and importers, agricultural associations, lifecycle analysis experts, environmental groups, vehicle manufacturers, states, gasoline and petroleum marketers, pipeline owners and fuel terminal operators. We also have worked closely with staff from the California Air Resources Board as they have been developing their low carbon fuel standard program.

To maximize transparency, EPA's proposal highlights the assumptions and model inputs that particularly influence our assessment and seeks comment on these assumptions, the models we have used, and our overall methodology. For example, we have particularly highlighted and sought comment on our use of satellite imagery data to model land use changes. We also conducted a number of sensitivity analyses which focus on key parameters and demonstrate how our assessments might change under alternative assumptions. For example, the proposed rule presents results for scenarios with higher crop yields, stricter land use policies in other countries, and other plausible scenarios suggested by experts and stakeholders.

Through this process, EPA has learned a great deal about each stage of the lifecycle of renewable fuels. We have learned that the time horizon over which emissions are analyzed and the application of a discount rate to value near-term versus longer-term emissions are critical factors in determining the ultimate GHG impact of biofuels. Thus our proposal highlights two options. One option assesses emissions impacts over a 100-year time period and discounts future emissions at 2% annually. The second option assumes a 30-year time period for assessing future GHG emissions impacts and values equally all emission impacts, regardless of time of emission impact (i.e., uses a 0% discount rate). The proposed rule goes into considerable detail explaining the conceptual argument informing the use of a particular time horizon and discount rate, while also specifically seeking comment on this issue, and also discusses several other variations of time period and discount rate. We also have greatly expanded our understanding of renewable fuel production processes and have identified several technologies available today (e.g., membrane separation) that can significantly reduce process-related GHG emissions. At the same time, we have identified specific areas where additional information and input would be useful. For example, the proposed rule asks for guidance on our assumptions about future corn yields.

Recognizing that lifecycle analysis is a new part of the RFS program and much of our methodology represents groundbreaking science, I have directed my staff to create multiple opportunities to solicit public and expert feedback on our proposed approach. In addition to the formal comment period on the proposed rule, EPA plans to hold a two-day public workshop focused specifically on lifecycle analysis during the comment period to

assure full understanding of the analyses conducted, the issues addressed, and the options that are discussed. We expect that this workshop will help ensure that we receive submission of the most thoughtful and useful comments to this proposal and that the best methodology and assumptions are used for calculating GHG emissions impacts of fuels for the final rule. Additionally, although our lifecycle analysis relies exclusively on peer-reviewed models and data, between this proposal and the final rule, we will conduct additional peer-reviews of key components of our analysis, including use of satellite data to project the type of future land use changes, methods to account for the variable timing of GHG emissions, and how the several models we have relied upon are used together to provide overall lifecycle GHG estimates.

In the same way that EISA has introduced lifecycle analysis to the RFS program, the statute has introduced restrictions on what feedstocks may be used to produce renewable fuel. For example, the new law limits the crops and crop residues used to produce renewable fuel to those grown on agricultural land cleared or cultivated prior to enactment of EISA, that is either actively managed or fallow, and non-forested. EISA also requires that forest-related slash and tree thinnings used for renewable fuel production pursuant to the Act be harvested from non-federal forest lands.

However, the new renewable biomass provision also presents definitional and implementation challenges that we did not have to consider when designing the original RFS program. To address these challenges, we coordinated with and sought input from a wide range of stakeholders, including renewable fuel producers, private forest owners,

and members of the agricultural and environmental communities, as well as with our colleagues in several USDA offices and agencies. Based on this extensive outreach and our own additional research, we have developed a proposal for public comment that we believe will position us to finalize and implement a practical and enforceable program.

With respect to the definitional challenges, there are a number of terms used in the renewable biomass definition that are subject to interpretation and need to be clarified, such as the terms "agricultural land" and "actively managed." With input from our colleagues at USDA and other stakeholder groups, we have proposed definitions for these specific terms that are meaningful in the context of the RFS program and that match existing industry definitions to the extent feasible. We also seek comment on alternative interpretations of these terms.

To fully understand the implementation challenges and opportunities presented by the new renewable biomass definition, we held extensive discussions with stakeholders. We also investigated existing federal reporting programs and third-party certification programs for agricultural and forest products, and for biofuel feedstocks, in the hopes of leveraging such programs to avoid redundancy for our regulated parties. As described in our proposal, we determined that no single existing program or certification system could be relied on to ensure compliance with the renewable biomass definition. Therefore, we developed our proposal, which would make renewable fuel producers responsible for ensuring that feedstocks used to produce renewable fuel for credit under the RFS program meet the definition of renewable biomass. We expect that renewable fuel

producers will work with their feedstock producers and suppliers to determine whether or not their feedstocks are in compliance. We also seek comment on a wide variety of alternative implementation approaches, including establishing an EPA-specified chain-of-custody tracking system for feedstocks as they move through the supply chain, and working with industry to establish an industry-wide quality assurance program. Our proposed and alternative approaches reflect many of the suggestions we received from stakeholders during the drafting process.

In closing, I believe EPA has put forward a proposal that is responsive to Congressional intent and fulfills the economic, energy, and environmental goals of the RFS program. We have developed the most comprehensive, current and scientifically supported approach undertaken to date to assess the lifecycle GHG impacts of renewable fuels. We look forward to continuing the dialogue on our approach through the public comment process on the proposal and through peer review of the specific items I have mentioned. Likewise, I believe our proposed approach for interpreting and implementing the EISA definition of renewable biomass successfully balances practicality with enforceability to meet the intent of Congress in promoting environmentally sound feedstock production for renewable fuels. The proposed rule offers an important opportunity for EPA to present this work and incorporate the input we receive over the coming months.

In the end, I am confident that we will be able to finalize a RFS2 rule that will achieve the benefits envisioned by Congress--to reduce our dependence on foreign

sources of crude oil, diversify our energy portfolio, and provide important reductions in greenhouse gas emissions.