



September 12, 2007

Mark Futrell
Florida Public Service Commission
2540 Shumard Oak Blvd.,
Tallahassee, FL 32399-0850
By e-mail: mfutrell@psc.state.fl.us

Subject: Florida Crystals Corporation Comments on a Renewable Portfolio Standard (RPS) for Florida

Dear Sir:

Florida Crystals Corporation (FCC) is the owner and operator of a large biomass fueled power plant in Palm Beach county. As such, FCC has an interest in the current FPSC deliberations regarding a RPS for Florida.

Attached are FCC comment in this regard.

Sincerely,

A handwritten signature in black ink, appearing to read "Gustavo R. Cepero". The signature is written in a cursive, flowing style.

Gustavo R. Cepero
Vice President
Florida Crystals Corporation

Florida Crystals Corporation Comments to the Florida Public Service Commission
(FPSC) Regarding a Renewable Portfolio Standard (RPS) for Florida
September 12, 2007

A. Florida Should Recognize the Value of Renewable Energy

Florida Governor Charlie Crist's recent announcements related to the use and development of renewable energy in an attempt to reduce greenhouse gas emissions has catapulted Florida to the forefront of energy discussions nationwide. Governor Crist's proposal will allow Florida to become a leader in the development of renewable energy and will allow Florida to develop its own renewable energy resources. His proposals will diversify Florida's fuel supply and stimulate economic and technology development within Florida.

It is well known that electricity generated from fossil fuels produces the largest amount of greenhouse gas (GHG) emissions. Twenty-six states have adopted a *renewable portfolio standard* (RPS) as a leading method of helping to reduce GHG emissions. The adoption and implementation of a RPS is part of a balanced approach to lessen the environmental impact of fossil fuels and is a cornerstone of the proposed energy policies for Florida.

Renewable energy is by definition a domestic, sustainable resource and by nature less price volatile than fossil fuels. Renewable fuel sources can make an important and necessary contribution to fuel diversification and price stabilization in Florida electric bills.

B. There are three additional reasons to support renewable energy in Florida

1. Reduce Florida's Greenhouse Gas Emissions

There should be no doubt that Florida has a GHG problem. In 2005, Florida ranked third in the nation behind Texas and Ohio in GHG emissions from electric power plants.¹ It is estimated that Florida's CO₂ emissions were 130,325,000 tons in 2005 and possibly more today.

There is sufficient evidence today to warrant taking action to slow and eventually reverse the growth in GHG emissions.² The threat of major, long-term environmental and economic damage from climate change is real. Industries, environmental groups, and the public support renewable energy as a very effective way of reducing GHG emissions because renewable electricity is GHG neutral or positive.

Governor Crist has directed the adoption of maximum emission levels of greenhouse gases for electric utilities. The standard will require a reduction of emissions to 2000 levels by 2017, to 1990 levels by 2025, and by 80 percent of 1990 levels by 2050.³

¹ Energy Information Administration, *State Electricity Profiles*, DOE/EIA-0348

² FPL Group's "Call to Action" on climate change and greenhouse gas emissions.

³ Press release from Governor Crist regarding the executive orders signed at the Climate Change Summit held in Miami, Florida, on July 12,13, 2007

The adoption of a RPS is of paramount importance in the implementation of an effective energy policy to reduce greenhouse gas emissions.

2. Provide Needed Fuel Diversity

The development of renewable energy technologies will create fuel diversity in a state that has become overly reliant on the importation of oil and natural gas as its primary energy source. Natural gas has become Florida's predominant fuel for electric generation. Today, natural gas is supplied to Florida via two pipelines from out of state that are vulnerable to natural and other disasters. When coupled with Florida's limited electric transmission line connections with neighboring states, it is evident that Florida is extremely vulnerable to experience unexpected interruptions in the supply of natural gas and electricity.

The Florida Public Service Commission has already concluded that as Florida becomes more dependent on liquid and gas fuels, supply disruptions due to hurricanes, lightning or other disasters, can cause severe power disruptions which will lead to price increases. Having a diverse fuel mix can mitigate the impact of such events.⁴

Maintaining a balanced fuel supply adds value to Florida's electric consumers in terms of supply reliability and price stability.⁵ Fuel diversity provides a type of insurance for unforeseen events affecting fuel price and supply. Fuel diversity is not only a potential cost-savings measure, but also a risk mitigation strategy.⁶

3. Economic Development

The development of renewable energy resources in Florida can be a major stimulus to Florida's economy. The positive economic impacts in Florida from producing electricity with biomass, and other renewable energy sources, are significantly greater than the impacts of producing electricity from fossil fuels. Fuel costs represent a large portion of electricity generation costs. More than 80% of the dollars needed to generate electricity with biomass stay in Florida and contribute directly to economic activity and job creation. By contrast, more than 80% of the dollars used to generate electricity with natural gas leave Florida and therefore have minimal impact to Florida economic activity.⁷

A RPS in Florida, which encourages the development of local renewable energy resources, will help develop a significant in-state renewable energy industry which will also include the growth of technology industries for renewable energy.⁸

⁴ *Review of 2006 Ten-Year Site Plans for Florida's Electric Utilities*, Florida Public Service Commission, December 2006, p. 7

⁵ *Ibid.* p. 7

⁶ *Ibid.* p. 7

⁷ See *The Potential Economic Benefits of a Renewable Portfolio Standard for Florida: A Case Study of Biomass*, The Washington Economics Group, Inc. January 6, 2003

⁸ *Ibid.* p. 2

C. A Florida Based RPS is Imperative for the Development of Florida Renewables

The adoption of a RPS with aggressive, yet attainable goals will preserve the existing renewable energy resources and encourage the development of new renewable energy resources.

The current regulatory system does not fully account for the risks of over dependence on fossil fuels. It does not assign any cost or penalty for GHG emissions and it does not consider the positive impact to the Florida economy of using domestic, Florida grown fuels rather than imported fossil fuels for electric generation. This system needs to be revised to reflect the true value of renewable energy to the Florida consumers, economy, environment and power systems.

There has been essentially no new development of renewable electricity resources in Florida in over 10 years. Electricity production from renewable energy resources has remained flat in Florida since the 1990's.⁹ It is self evident that the existing Florida regulatory system does not provide an appropriate business environment for the development of renewable energy. Instead, it has served as an impediment to the development of renewable energy.

D. A RPS of 20% is Achievable with Biomass Resources

Does Florida have enough renewable energy resources to make a meaningful contribution to the state's energy needs? Yes. Florida has the potential to develop wind, solar and ocean current technologies that can provide cost efficient energy in the future. Immediately, however, Florida has the potential to lead the nation in the development of biomass as their leading renewable energy resource. The Energy Information Agency reported in its 2007 Annual Energy Report that biomass is the largest source of renewable electricity generation among renewable fuels other than hydroelectricity.¹⁰

Florida has 16.5 million acres of forestland, of which, 13 million acres are commercial forests. The state also has 3.8 million acres of agricultural land. All of this land is suitable for producing millions of tons of biomass per year,¹¹ with heat rates that are suitable for generating electricity using existing boiler technologies.¹²

Florida is better suited for biomass production than almost anyplace else in the United States. Favorable climatic conditions in Florida such as a long growing season, high rainfall, and available land, produce higher yielding biomass crops. Results of various studies indicate that Florida has an advantage in all three of these important areas.¹³

⁹ *Ibid.*, p. 1

¹⁰ See *Annual Energy Outlook with Projections to 2030*, Report Number: DOE/EIA-0383(12007), Energy Information Administration, U.S. Department of Energy

¹¹ See *Florida Biomass and Bio-energy Overview*, Samuel W. Jackson, Southeastern Sun Grant Initiative, Southeast Regional Sun Grant Center, 506 Jacob Drive, Knoxville, TN

¹² See *A Comparison of Renewable Energy Options for Florida*, M. Rahmani, J.A. Striker, and C.F. Kiker, IFAS, University of Florida

¹³ *Ibid.*,

A small fraction of the total Florida land suitable for agriculture has the potential to support a RPS of 20%. The following simple analysis supports this conclusion.

- a. A 20% RPS for Florida translates into approximately 50,000,000 MWH.
- b. Energy crops in Florida, such as napier grass, could produce 20-30 tons of dry matter/ acre/year. The heating value of biomass is typically 16 MMBtu/dry ton. The heat rate of a conventional stoker fired biomass power plant is 13-14,000 Btu/kwh. New biomass gasification technology can achieve heat rates below 10,000 Btu/kwh.
- c. Using the above parameters, land space in the range of 1,000,000 to 1,250,000 acres of dedicated biomass crops would be required to support a 20% Florida RPS using strictly “closed loop” biomass sources with CURRENT TECHNOLOGY. This land space represents less than 5% of the Florida agricultural land resource.
- d. Studies performed by The Institute for Agricultural and Food Sciences (IFAS) at the University of Florida found over 70,000 parcels in Florida representing 6 million acres suitable for biomass production.¹

Moreover, a RPS would stimulate technology development and an improvement in the “energy density” of biomass production and conversion. Plus, any RPS would also include waste to energy facilities, urban biomass, crop residues, as well as solar, ocean current, and other renewable technologies.

E. Cost Impact of a RPS

The traditional criticism of renewable energy is that it will lead to a significant increase in the cost of electricity to consumers. Studies recently conducted by the U.S. Department of Energy¹⁴ and a national energy lab in California¹⁵ have concluded that this argument is significantly overstated. Renewable energy sources can provide stability and long term predictability instead of the volatility associated with fossil fuels. Furthermore, the price impact of renewable energy development can be in line with other, traditional energy sources, if renewable energy is developed efficiently.¹⁶

¹⁴ See *Impacts of a 15-Percent Renewable Portfolio Standard, June 2007*, Energy Information Administration, U.S. Department of Energy, Washington D.C, When asked to analyze the impact of 15% federal RPS, the Energy Information Agency found relative to the reference case, retail electricity prices rise by an average of 0.9 percent over the 2005 to 2030 period in the RPS case

¹⁵ See *Weighing the Costs and Benefits of State Renewable Portfolio Standard: A Comparative Analysis of State-Level Policy Impact Projections*, Cliff Chen, Ryan Wiser, and Mark Bollinger, Environmental Energy Technologies Division, Ernest Orlando Lawrence Berkeley National Laboratory, March 2007

¹⁶ The Energy Information Administration states in its *Annual Energy Outlook, 2007*, that the cost of developing new biomass resources is \$1,869 per kW, compared to \$2,081 per kW for advanced nuclear and \$2,134 per kW for IGCC plants with carbon sequestration.

Recent increases in price for fossil fuels in Florida have been dramatic and have resulted in significant cost increases to consumers without providing any stability or predictability of future costs. Residential power bills in Florida have increased by over 25% just in the last two years. The price of natural gas has more than doubled, and in some cases tripled in the past five years, depending on weather conditions or storms in other parts of the country.

F. No Artificial Constraints on the RPS.

The conventional “avoided cost” or “least cost” models do not capture the environmental, fuel security, and economic development benefits of renewables.

Renewable supply alternatives should compete with other renewable alternatives, not with fossil or nuclear alternatives. Individual decisions on renewable supply alternatives should be based on cost, risk, environmental, fuel diversity, and other relevant considerations of such alternatives, not just on the “avoided cost” or the “least cost” of fossil alternatives.

Finally, the RPS should NOT be subject to any cap (such as the 1% of utility revenues proposed by some parties) which may serve as a detriment to the development of renewables.

G. A Florida RPS Should Be Based on Florida Resources; REC's Must Play a Limited Role

To fully capture the environmental, fuel diversification, economic development, and technology innovation benefits associated with a RPS policy, it is necessary to encourage the development of **Florida** renewable resources.

Trading of Florida based renewable energy credits (RECs) should be part of the RPS program because REC's add efficiency and flexibility to the system. The production of renewable energy should gravitate to the locations within Florida which make the most economic and environmental sense and should not be constrained by utility territorial considerations.

As explained above, Florida has the agricultural resources to support an aggressive RPS using biomass. In addition, Florida can also develop other renewable technologies, such as solar.

Reliance on out of state resources, including out of state REC's, largely defeats the policy purpose of the RPS. This is particularly true in the case of REC's which are financial instruments with little if any impact on Florida fuel diversity, job creation, or clean air. In a scenario where GHG emissions are regulated, allowance of out of state resources or REC's would place Florida at a significant competitive disadvantage.

Finally, Florida is a huge consumer of energy. An RPS affords Florida an opportunity to accept its share of responsibility.

H. A RPS Should Include Existing Renewables

Existing renewables represent about 2% of the Florida fuel mix. These existing resources have been making the contributions described above for many years.

As is the case in virtually all other states which have adopted a RPS, these resources should be included in the program for various reasons:

1. The great value of a RPS to renewable producers is to bring long term market stability and predictability. Just like any other power plant, existing producers must spend significant resources (i) to operate and maintain facilities; (ii) to conform with environmental requirements; (iii) and to remain competitive with new entrants and technologies. Excluding existing resources from a RPS would relegate these facilities to an inferior class status and may well lead to the contraction or possible shutdown of some facilities.
2. The benefits discussed above associated with renewable electricity are independent of vintage. New as well as existing facilities contribute. Exclusion of existing facilities could well lead to backsliding on the gains contributed by these resources.
3. Fairness.