

No.: 241/QĐ-UBND

*An Giang, February 9<sup>th</sup>, 2015*

**DECISION**

**Approving Strategy of effective management and utilization of rice biomass in climate change context for An Giang province to 2030**

**CHAIRMAN OF PROVINCIAL PEOPLE’S COMMITTEE OF GIANG**

Pursuant to the Law on Organization of People's Council and People's Committees dated November 26<sup>th</sup>, 2003;

Pursuant to Resolution No. 24-NQ/TW dated 03/6/2013 of the Party Central Committee regarding actively responding to climate change, enhanced resource management and environmental protection;

Pursuant to Decision No. 79/2006/QĐ-TTg dated 14/04/2006 regarding the approval of the National target program on energy saving and efficiency;

Pursuant to Circular No. 10/2006/TT-BTNMT dated 12/12/2006 of the Ministry of Natural Resources and Environment regarding guiding how to build Clean Development Mechanism projects under the Kyoto Protocol;

Pursuant to Decision No 158/2008/QĐ-TTg dated 02/12/2008 of the Prime Minister regarding approving the National target program on responding to Climate Change;

Pursuant to Decision No. 2139/QĐ-TTg dated 12/05/2011 of the Prime Minister regarding approving the National Strategy on Climate Change;

Pursuant to Decision No. 24/2014 / QĐ-TTg dated 03/24/2014 of the Prime Minister regarding the mechanisms supporting the development of biomass power projects in Vietnam;

At the request of the Director of the Department of Natural Resources and Environment in Report No. 229/TTr-STNMT dated 12/30/2014 regarding Approving Strategy of effective management and utilization of rice biomass in climate change context for An Giang province to 2030.

**DECIDE:**

**Article 1.** Approve Strategy of effective management and utilization of rice biomass in climate change context for An Giang province to 2030, with some main contents as following:

### **1. Name and management unit**

a) Name of the Strategy: Approving Strategy of effective management and utilization of rice biomass in climate change context for An Giang province to 2030 (hereby called as Strategy).

b) Management unit: An Giang Department of Natural Resources and Environment.

### **2. Objectives**

a) *Overall objectives* are to construct a sustainable, efficient and rescuing energy system from rice residues which reduces affections to communities' health, environment and climate change.

b) *Specific Objectives is to find measures to:*

- Increase renewable energy production,

- Increase the participation and interest of the whole society,

- Reduce GHG emission till 2030 the amount of reduced GHG is 33.601tons CO<sub>2</sub>/year (Chau Thanh district) and 300.888 tons CO<sub>2</sub>/year (An Giang province), through measures such as: collecting and using effectively rice husk, rice straw, increasing area applying 1 Must 5 Reduction program, ...

- Contribute to the economic growth in a sustainable way for the rice communities in Chau Thanh district and An Giang province.

c) *Green growth objectives toward to climate change for growth and production of rice in An Giang:*

(1) The overall objectives are to increase green growth, reduce GHG emission, and accelerate bio-energy power production by exploitation of rice straw residues in order to bring the communities to low-carbon economy and sustainable development.

- The specific target for the year 2020 is to achieve GHG emission reductions being caused by rice and paddy production activities at 4 % in comparison of the figure in 2013; and remain 1% annually after 2020.

(2) Economic development targets:

- Develop local and area economy through increasing income of farmers and business from improving rice value chain;

- Reduce pressure and cost for environmental managers in rice waste treatment in next time;

- Bring rice agriculture in An Giang province to approach high technology application;

### (3) Specific targets for farmer

- Improve farmers' life from reusing and collecting rice wastes.

- Enhance people's standard of living in rice cultivation areas by implementing measures which being reduced environmental pollution, encouraging reusing potential of rice wastes to produce renewable energy sources.

- Improve awareness of using and recycling rice waste resources, turning rice residues to renewable energy.

- Enhance people's health due to mitigate environmental pollution from rice growing fields

- Be involved in environmental protection program, reducing greenhouse gas emissions from rice cultivation

- Contribute to the sustainable economic development of the province;

### (5) Specific targets for Rice mill and rice dryer factories

- Increase profit in chain of production and processing rice

- Access to advanced technologies for energy-saving products and enhance the efficiency of using resources and energy

- Contribute and support clean energy sources approximately 70 MW for An Giang and nation in 2030

- Be improved awareness of environmental protection driving mainly from GHG emissions and energy-saving from rice production activities

- Be actively participated in reducing environmental pollution in agricultural productions.

### **3. Object and scope of implementation**

The plan is carried out within the framework of the project “An Giang and Pitea – Sustainable Municipalities” and Chau Thanh district (An Giang province) has been chosen for case study. In which rice cultivation farmers, rice mills, rice dryers and local management staff are target group of this Strategy.

**4. Time for implementation:** Period 2015 – 2020 vision to 2030.

#### **5. Green house gas reduction when applying the strategy**

a) Chau Thanh: Estimated CO<sub>2</sub> emission reduction from rice cultivation scenarios, collect rice straw, reduce use of fertilizers and plant protection chemicals, electricity use from rice husk/rice straw and reduce emissions in rice transportation to 2020 is 7% and to 2030 will reduce 11% compared to 2013 emissions.

b) An Giang: Estimated CO<sub>2</sub> emission reduction from rice cultivation scenarios, collect rice straw, reduce use of fertilizers and plant protection chemicals, electricity use from rice husk/rice straw and reduce emissions in rice transportation to 2020 is 4,5% and to 2030 will reduce 12% compared to 2013 emissions.

#### **6. Proposed programs for development of biomass energy with rice residues**

##### **a) Programs:**

(1) Awareness rising for farmers, enterprises and officials on benefits of rice residues and roles of power plants with rice husk and training and capacity building on governmental management on power generation with rice husk

(2) Development of rice Eco-industrial zone and Encouraging enterprises to develop green products from rice residues (i.e. develop the technology of husk pellet production, heat-insulating material, silica steel billet and filter materials)

(3) Linkage of financial investors, banks with enterprises and farmers in financial supporting for waste-to-energy projects and green products. National and international financial support for power generation with rice husk and for green products.

(4) Scientific research on supportive policies on biomass energy development and other green products from rice residues; research on power generation technologies, bio-fuel, silica, filter materials, heat-insulating material, fertilizer, etc.

(5) International cooperation for capacity building on agricultural residues management, and for application of international advanced technology into waste-to-energy in An Giang.

**b) Road-map:**

The road map includes the following two periods:

(1) Period 1- from 2015 to 2020:

- Cultivation area rate of straw collection and not burning at rice field is 20% for An Giang and 40% for Chau Thanh;

- Area of rice cultivation that applying high technology integrated with 1 Must 5 Reduction method including reducing fertilizer and pesticides for An Giang is 80257 ha (33,7%) and is 5090 ha for Chau Thanh.

- Rate of rice husk collecting for electricity, fuel (pellet or briquette) is 30% for An Giang and 50% for Chau Thanh;

(2) Period 2- from 2021 to 2030:

- Cultivation area rate of straw collection and not burning at rice field is 40% for An Giang and 60% for Chau Thanh;

- Area of rice cultivation that applying high technology integrated with 1 Must 5 Reduction method including reducing fertilizer and pesticides for An Giang is 101440 ha (42,6%) and is not increase for Chau Thanh.

- Rate of rice husk collecting for electricity, fuel (pellet or briquette) is 50 % for An Giang and 75 % for Chau Thanh;

- Rate of rice husk collecting for energy or fuel is 15 % for An Giang and 30 % for Chau Thanh; Straw collection can be used to produce fuel, mushroom cultivation or treated with Trichoderma in the field to produce fertilizer instead of burning in the field.

At each stage of the program there will have evaluation on effectiveness of implementation twice/ year. In particular, the Department of Natural Resources and Environment preside over and coordinate with other departments expertise to evaluate the effectiveness of specialized field in Strategy, namely: Department of Agriculture and Rural Development evaluate the effectiveness of reducing plant protection chemicals, collect straw in the field, the Department of Natural Resources and Environmental assess CO2 reductions, the Department of Trade and Industry evaluate the planning and the ability to build and use of biomass energy,....

### **c) Contents implementation of the Strategy:**

Total funding for 05 programs above is 4.310 billion. Funding for the preparation and planning are mobilized from various sources: the state budget, loans, funded by foreign organizations, businesses, and their own capital... under Vietnamese legal regulations. If using the provincial budget resource, it will be considered, balanced and specific decision of the PPC.

*(Attach detailed appendix)*

### **d) Plan implementation measures**

#### **(1) Policy measure**

- At ministerial level, Ministry of Industry and Trading (MoIT) needs to build and support biomass power development in accordance with Decision No. 24/2014/QĐ-TTg dated 24 Mar 2014 on the support mechanism for development of the biomass power projects in Việt Nam.

At provincial level, An Giang needs to shortly complete the bio-energy master plan to 2020 and send it to the MoIT for approval to make it a legal document directing for development of bio-energy and renewable energy in An Giang.

- Continue proposing suitable mechanisms so as to shortly carrying out the biomass power plans and other green products in An Giang (e.g credit mechanism, tax, land, tariff, subsidy, etc)

#### **(2) Planning measure**

- Develop biomass power master plan with agricultural residues in An Giang (other crops, livestock waste).

- Develop detailed master plan on biomass power plants below 10MW for self supply and selling partly to processing factories and rice Eco-industrial zones.

- Planning of large scale-model-fields applying GHGs emission reduction programs

#### **(3) Information, education and communication measure**

- Collaborate with national and international training organizations for capacity building on project management, technology transfer, sustainable bio-energy development, etc for governmental officials at all levels. Some training organizations could be An Giang University, Can Tho University. Moreover,

organizing workshops to get opinion and feedback may be necessary for adjusting the master plan.

- Collaborate with Agricultural Extension Centers for short-term training courses and introduction of combined model of agricultural production and bio-energy generation to farmers.

#### **(4) Technology measure**

With the development of today science, we will have many more options for managers and investors. Some criteria for selecting technology:

- High production efficiency;
- Reasonable investment cost and operation cost;
- Modern and updated technology;
- Applicable for local conditions.

### **Article 2. Organization of implementation**

#### **1. Natural resources and Environment Department**

- Implement assigned State management functions; coordination with other departments and districts, city manage and well implement this strategy.

- Instruct and support Departments, people's Committee of district, town, city and association to build and carry out the strategy. Besides, instruct, monitor and assess implementation of this strategy.

- Build intentional cooperation projects in building capacity for officials, business, farmers on turning waste to energy, implement propagation plans on building management capacity for general manager, project development and implement of projects, pilots to turn waste into energy, find the funding to support businesses. Create link of company, financial organizations to build supporting projects for business in order to carry out strategy of waste to energy and other high effective products.

- Provincial People's Committees in to direct and coordinate among functional Departments in the province in order to implement of the contents of this strategy and develop detailed action plan to turn waste into energy for each sector in the framework of national objectives, programs, plans and planning of province and central ministries; Advice and integrate factors climate change into policies, planning, plans into building the provincial budget

- Help PPC advice Central to issue policies to encourage investment in turning waste into energy from rice. In which focus:

+ Mechanism of investment capital, land...;

+ There are encouraging policies that is according to authority of the province about energy savings, mandatory for agencies, companies, individual workers and farmers ...;

+ Facilitate for supporting, receiving the ideas of energy savings, efficient use of agricultural residues ...;

- To advise PPC propagation plans to officials and state employees, students disseminated to the public about energy saving policies and enabling enterprises to invest in this type of production on turning waste into energy from rice or other products.

## **2. Agricultural and Rural development Department**

- Build implementation plan for GHGs reduction rice production program.

- Organize training classes on effective cultivation such as: 1 Must 5 Reduction; 3 Reduction 3 Increasing; using organic fertilizer.

- Build detailed implementation program on managing solid waste rice straw, rice husk and turn into energy.

- Coordinate with the related Departments, local government to organize awareness raising training in the community and common deployment of closed cultivation model.

## **3. Science and Technology Department**

- Chair and coordinate with organizations and individuals to promote and implement the program proposed in the Strategy.

- Support for promoting implementation of the content related to the application operation of modern science and technology in green manufacturing, development of green products from rice; promote scientific research in the development of biomass resources from agricultural residues (for production of electricity, bio-fuels, silica, filtration, insulation, fertilizer, animal feed ...).

- Promote of international cooperation, apply new technologies of the world into manufacturing technology, turning waste into energy.

## **4. Industry and Trade Department**

- Build rice husk power plant planned for small and medium scale, submit Ministry of Industry and Trade. Coordinate PC in district, town and city to organize deployment of self-sufficiency power plant and partly grid connected. Propose appropriate policy mechanisms to facilitate business investment, find markets for the products of biomass;

- Attract businesses to invest and develop biomass power plants and green products from rice waste or agricultural by-products;



- Propose to Industry and Trade and the Government about electricity subsidy mechanism for sell grid connected electricity and other preferential interest rates.... for different types of biomass production into energy and products from biomass.

## **5. Planing and Investment Department**

- Attract businesses to invest and cooperate and biomass power plants green products from rice waste.

- Search for businesses looking for capital investment and help businesses develop biomass power market in the province.

## **6. Finance Department**

Implement duties of state management, evaluate and allocate capital for operations in strategy after the Department building detailed plans.

**7. Information and Communication Department, An Giang News, An Giang Radio and TV station, Associations:** Develop propagation plan to the levels of associations, farmers and enterprises of the meaning of the waste into energy plan and results of the implementation of the strategy for many years...

## **8. People's Committee at districts, towns and cities in province**

- District, town, city PC are responsible for building local strategy

- direct the unit to join the provincial departments to implement 05 in localities programs;

- Organize propaganda to each citizen of strategy, coordinate and implement programs to collect rice straw, rice husk, build rice husk power plants or plant having new products from agricultural waste;

- Disseminate recommends of the province's farming schedule in localities;

- Encourage environmental protection in agriculture, not leave pesticide packaging materials into rivers and canals;

- Coordinate with the departments concerned implement the propagation, training on farming methods to reduce emissions and other propaganda to encourage farmers to cultivate scientifically, increase productivity, quality and profitability

**Article 3.** This Decision shall take effect from the date of signing. Chief of Office of the Provincial People's Committee, Director of the Department of Natural Resources and Environment, heads of Departments and the Chairman of

the People's Committees of districts, towns and cities are responsible for implementing this Decision. /.

***Recipients:***

- Permanent People's Council, PPC;
- Departments, Provincial Union;
- Leaders PPC office;
- DPCs, town or city
- Economic, Administrative Division;

**PP. CHAIRMAN  
VICE CHAIRMAN**

**(Signed and sealed)**

**Hồ Việt Hiệp**

## Appendix

### Content of program implementation

*(Attached to Strategy of effective management and utilization of rice biomass in climate change context for An Giang province to 2030)*

No	Program	Implementation time (years)	Capital (billion VND)			Implementing	Result
			Budget	Business	To socialize		
1	Awareness raising for farmers, enterprises and officials on benefits of rice residues and roles of power plants with rice husk	20	5		2.5	Department of Agriculture and Rural Development preside over implementing and co-ordinate with: + Department of Natural Resources and Environment + Department of Trade and Industry + Department of Information and Communications + Association (Farmers Union, Association Bioenergy and Sustainable Development ...) + Business + Local government + University and people	10 campaigns per year
	Training and capacity building on governmental management on power generation with rice husk		5			Department of Trade and Industry preside over implementing and co-ordinate with: + Department of Natural Resources and Environment + Department of Agriculture and Rural Development + Department of Science and Technology + Farmers Union, Association	Number of trainees

						Bioenergy and Sustainable Development ... + Local government	
2	Development of rice eco-industrial zone	15	50	450		Department of Trade and Industry preside over implementing and co-ordinate with: + Department of Natural Resources and Environment + Department of Agriculture and Rural Development + Department of Science and Technology + Local government + Finance/credit organisations	Rice eco-industrial zones
	Encouraging enterprises to develop green products from rice residues (i.e. develop the technology of husk pellet production, heat-insulating material, silicic steel billet and filter materials)		5	450		Department of Natural Resources and Environment preside over implementing and co-ordinate with: + Provincial People's Committee +Local government +Other Department , + Finance/credit organisations + Business	Number of products from agricultural residues
3	Linkage of financial investors, banks with enterprises and farmers in financial supporting for waste-to-energy projects and	15	5	5	15	Department of Natural Resources and Environment (Fund for Environmental Protection) preside over implementing and co-ordinate with: + Provincial	Number of implemented projects

	green products					People's Committee +Local government + Other Department, +University + Finance/credit organisations + Business	
	National and international financial support for power generation with rice husk and for green products	15		1280	1920	Department of Planning and Investment preside over implementing and co-ordinate with: + Business + Finance/credit organisations + Other Department.	Power plants and other products from biomass
4	Scientific research on supportive policies on biomass energy development and other green products from rice residues; research on power generation technologies, biofuel, silica, filter materials, heat-insulating material, fertilizer, etc.	15	30			Department of Science and Technology and Department of Natural Resources and Environment preside over implementing and co-ordinate with: + Other Department + Business and Finance/credit organisations	Policies related to waste-to-energy programme

5	International cooperation for capacity building on agricultural residues management, and for application of international advanced technology into waste-to-energy in An Giang.	15	50			Department of Natural Resources and Environment preside over implementing and co-ordinate with: + Other Department	Number of implemented projects
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*The total estimated budget is 4.310 billion VND, which is mobilized from various sources: the state budget, loans, funded by foreign organizations, businesses, and their own capital... under Vietnamese legal regulations.*