

**MINISTRY OF INDUSTRY  
AND TRADE**

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No. 52/2018/TT-BCT

**SOCIALIST REPUBLIC OF VIETNAM  
Independence – Freedom – Happiness**

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*Hanoi, December 25, 2018*

**CIRCULAR**

**ENERGY CONSUMPTION QUOTA IN FISHERY PROCESSING, APPLICABLE TO  
INDUSTRIAL PROCESSING OF CATFISH AND SHRIMP PRODUCTS**

*Pursuant to Law on Efficient and Effective Use of Energy dated June 17, 2010;*

*Pursuant to Decree No. 21/2011/ND-CP dated March 29, 2011 of Government on elaborating to Law on Efficient and Effective Use of Energy;*

*Pursuant to Decree No. 98/2017/ND-CP dated August 18, 2017 of the Government on functions, tasks, powers, and organizational structure of the Ministry of Industry and Trade;*

*Implementing Decision No. 1028/QĐ-TTg of the Prime Minister dated July 13, 2017 approving the legal framework in 2018 within the Support program to respond to climate change (SP-RCC);*

*At request of Director General of Energy Efficiency and Sustainable Development Department;*

*The Minister of Industry and Trade promulgates Circular on energy consumption quota in fishery processing, applicable to industrial processing of catfish and shrimp products.*

**Chapter I**

**GENERAL PROVISIONS**

**Article 1. Scope**

This Circular prescribes energy consumption quota of industrial processing of catfish and shrimp products during the period that lasts until the end of 2025 and the period that lasts from 2026 to the end of 2030.

**Article 2. Regulated entities**

This Circular applies to catfish and shrimp processing facilities with capacity upwards of 300 tonne of products/year and relevant agencies, organizations.

**Article 3. Definition**

1. “specific energy consumption” (SEC) refers to total energy required to directly or indirectly processing an equivalent product.
2. “energy consumption quota” refers to SEC goal of each stage according to this Circular.
3. “individual quick freezing” (IQF) refers to a method of flash freezing individual products.
4. “equivalent product” refers to the result of converting processed products to a product equivalent to IQF fish fillet, 15% or lower ice-glazed, once refrozen and IQF fresh shrimp using conversion factor under Appendix I attached hereto.

## **Chapter II**

### **ENERGY CONSUMPTION QUOTA AND SOLUTIONS FOR IMPROVING ENERGY EFFICIENCY IN FISHERY PROCESSING**

#### **Article 4. Methods of determining SEC**

SEC of catfish and shrimp product processing is determined using methods under Appendix I attached hereto.

#### **Article 5. Energy consumption quota**

1. Energy consumption quota applicable to catfish product processing is 1.050 kWh/tonne of equivalent fish product and 2.050 kWh/tonne of equivalent shrimp product for the period that lasts until the end of 2025.
2. Energy consumption quota applicable to catfish product processing is 900 kWh/tonne of equivalent fish product and 1.625 kWh/tonne of equivalent shrimp product for the period that lasts from 2026 until the end of 2030.

#### **Article 6. Requirements for assurance of energy consumption quota**

1. Active fishery processing facilities whose SEC is higher than respective energy consumption quota in each stage mentioned under Article 5 hereof must prepare and implement plans for improving energy efficiency in order to meet energy consumption quota mentioned under Article 5 hereof.
2. Before January 15 each year, fishery processing facilities are responsible for submitting reports to local Departments of Industry and Trade on:
  - Implementation of energy consumption quota of the previous year according to Appendix IV hereof.
  - Apart from the aforementioned reports, fishery processing reports whose SEC is higher than energy consumption quota under this Circular are also responsible for producing reports on plans

for improving energy efficiency which specify energy-saving solutions and plans for implementation in accordance with Clause 1 of this Article.

### **Article 7. Solutions for improving energy efficiency in fishery processing**

1. Solutions for improving energy efficiency include:

- Develop energy management system in fishery processing facilities and improve energy efficiency in energy management;
- Implement solutions for improving energy efficiency with low investment (replacing individual equipment with equipment with higher energy efficiency);
- Implement solutions for improving energy efficiency with high investment (replacing one or several pieces of equipment with one or several pieces of equipment with higher energy efficiency or change technology in order to improve energy efficiency).

2. Encourage fishery processing facilities to adopt solutions under Appendix II hereof.

## **Chapter III**

### **ORGANIZATION FOR IMPLEMENTATION**

#### **Article 8. Responsibilities of Energy Efficiency and Sustainable Development Department**

1. Take charge and cooperate with relevant authorities in guiding, inspecting, and supervising the implementation of this Circular.
2. Cooperate with Departments of Industry and Trade of provinces to inspect the implementation of energy consumption quota and feasibility of plans in order to enforce energy consumption quota in roadmaps.
3. Consolidate and submit reports on implementation of the Circular to the Ministry of Industry and Trade and propose actions against failure to adequately implement this Circular.

#### **Article 9. Responsibilities of Departments of Industry and Trade**

1. Cooperate with Energy Efficiency and Sustainable Development Department in guiding, expediting, and inspecting implementation of this Circular.
2. On an annual basis, inspect the compliance with energy consumption quota, feasibility of plans in order to ensure compliance with energy consumption quota according to roadmap of provincial fishery processing facilities (for processing facilities that have not met energy consumption quota).

3. Consolidate compliance with energy consumption quota on an annual basis of provincial fishery processing facilities and submit reports to the Energy Efficiency and Sustainable Development Department, Ministry of Industry and Trade before January 31 of the following year in accordance with Appendix III hereof.

#### **Article 10. Transition clauses**

Within 6 months from the effective date hereof, fishery processing facilities which are unable to determine energy consumption quota as per this Circular are responsible for installing adequate energy meters in order to calculate SEC of the facilities.

#### **Article 11. Entry into force**

1. This Circular comes into force from February 18, 2019.
2. Difficulties that arise during the implementation of this Circular should be reported to the Ministry for consideration./.

**MINISTER**

**Tran Tuan Anh**

#### **APPENDIX I**

**METHODS OF DETERMINING SEC IN FISHERY PROCESSING FACILITIES**  
*(Attached to Circular No. 52/2018/TT-BCT dated December 25, 2018 of Minister of Industry and Trade)*

1. Scope of assessment: Catfish and shrimp processing facilities, processing areas and areas serving the processing of catfish and shrimp products, including laboratories and auxiliary areas (areas for water cooling, ventilating, water supply treatment, wastewater treatment).

Administrative sections (offices, cafeterias, etc.) and sections for other activities within processing facilities (for processing other products, exhibition, product sale, provision of freezing services, etc.) are not subject to this assessment.

2. The period in which SEC of the assessment subject is determined is one year, starting from January 1 to December 31 each year. If SEC of processing facilities must be inspected, the inspected period shall be the time it takes to finish one production cycle.

3. Parameters for determining SEC of fishery processing facilities:

<i>Parameter</i>	<i>Explanation</i>	<i>Unit</i>
Electricity(cb)	Total electricity for processing shrimp and catfish, including indirect processing activities such as those in laboratories and auxiliary activities (chilling water, ventilating, treating water supply, treating wastewater)	kWh
Electricity(hd)	Total electricity used according to invoice	kWh
Electricity(indirect)	Total electricity estimated for purchase of ice or cold store for the assessed products	kWh
Electricity(other)	Total electricity used by processing facilities to process products other than shrimp and catfish or sell ice, lease cold store or power other activities beyond the assessment scope such as administrative sections, product exhibition rooms, points of sale.	kWh
Productivity(qd)	Total annual processing productivity converted to IQF fish fillet, 15% or lower ice-glazed, once refrozen and IQF fresh shrimp.	kg

4. SEC of fishery processing facilities is determined using the formula below:

$$SEC = \frac{\text{Electricity } (cb)}{\text{Productivity } (qd) * 0,001}$$

*In which:*

a. Electricity (cb), expressed in kWh, is electricity used by assessed shrimp and catfish processing facilities during the assessment period and is determined by electricity bill minus electricity serving other activities and processing and adding electricity serving the processing indirectly via the purchase of ice or rent cold store for the assessed products.

$$\text{Electricity}(cb) = \text{Electricity}(hd) - \text{Electricity}(\text{other}) + \text{Electricity}(\text{indirect})$$

- Electricity(hd): Is determined by electricity bill of fishery processing facilities during reporting period.

- Electricity(other): Is determined by meters during reporting period. Estimation is allowed if separate measuring instrument is not installed for activities beyond the assessment scope, including:

+ In case of electricity beyond the scope of assessment: Electricity used for offices, cafeteria, and other purposes shall be estimated to be 3% of total electricity on the electricity bill;

+ In case processing facilities process ice blocks: Electricity serving this purpose shall be estimated to be 70 kWh/tonne of sold ice blocks;

+ In case processing facilities lease cold storage: Electricity serving this purpose shall be estimated to be 2,5 kWh x tonne of products x duration of lease (days).

- Electricity(indirect) is electricity estimated to be serving the purchase of ice blocks or rent of cold storage according to productivity of reporting period.

+ In case processing facilities purchase ice blocks from external parties: Electricity serving this purpose shall be estimated to be 70 kWh/tonne of ice blocks;

+ In case processing facilities rent cold storage from external parties: Electricity serving this purpose shall be estimated to be 2,5 kWh x tonne of products x duration of rent (days);

b. Productivity(qd), expressed in kg, is total productivity of processed catfish or shrimp products converted to equivalent products using conversion factors below.

$$\text{Productivity (qd)} = \sum \text{Productivity(i)} * \text{Conversion factor (i)}$$

<b>Catfish products</b>	
Products	Factor
1. IQF fish fillet, 15% or lower glazed, once refrozen	1,00
2. IQF fish fillet, 25% or lower glazed, twice refrozen	1,30
3. IQF fish fillet, 35% or lower glazed, thrice refrozen	1,50
4. IQF whole butterfly fish fillet, 15% or lower glazed, once refrozen	1,10
5. IQF whole butterfly fish fillet, 25% or lower glazed, twice refrozen	1,43
6. IQF whole butterfly fish fillet, 35% or lower glazed, thrice refrozen	1,65
7. Fillet fish, whole fish, seasoned whole fish of all kinds frozen in air-blast freezers and chest freezers	0,87
8. CF frozen block products	0,82
9. IQF fish segments, pieces, and whole fish	1,11
10. By-products, frozen ingredients, twice frozen products on IQF or freezers	0,73

<b>Shrimp products</b>	
Products	Factor
1. IQF fresh shrimps of all kinds,	1,00
2. IQF steamed shrimps of all kinds	0,83
3. Nobashi shrimp of all kinds, sushi shrimps, ebifry shrimps, shrimp ring	1,32

4. Tempura shrimps	1,63
5. Frozen fresh shrimp blocks in CF or ABF, frozen ingredients	0,76

- In case processing facilities also process shrimp and catfish products other those mentioned above, convert processed products to equivalent product (in terms of dimension, packaging, and processing) with conversion factor of 1.

- In case processing facilities also process products other than shrimps and catfish but cannot determine electricity used for these products, convert to equivalent products (in terms of dimension, packaging, and processing) with conversion factor of 1.

- Shrimp and catfish processing facilities that cannot determine electricity used for processing each product must convert to either of the 2 primary products in order to assess SEC given that 1 tonne of equivalent fish is equal to 0,56 tonne of equivalent shrimp or 1 tonne of equivalent shrimp is equal to 1,78 tonne of equivalent fish.

## **APPENDIX II**

### **SOLUTIONS FOR INCREASING ENERGY EFFICIENCY IN FISHERY PROCESSING** *Attached to Circular No. 52/2018/TT-BCT dated December 25, 2018 of Minister of Industry and Trade*

#### 1. Solutions for improving manufacturing procedures and energy use management

- a) Restrict non-loaded or partially loaded IQF. If partially loaded IQF is required, adopt solutions for adjusting refrigeration system capacity;
- b) Efficiently use freezing equipment;
- c) Strictly manage the manufacturing and use of ice;
- d) Manage the use of cold storage, close cold storage if no human or vehicle enters the facility;
- dd) Maintain cold storage temperature at necessary level;
- e) Strictly manage the use of air-conditioning unit;
- g) Alter equipment usage in case of low processing capacity;
- h) Other solutions.

#### 2. Solutions for improving cold equipment operational procedures

- a) Prevent compressors from operating at a partially loaded;

- b) Do not operate cold storage, flake ice and freezing equipment at the same boiling temperature;
- c) Keep suction pressure at a reasonable value;
- d) Defrost cold storage as per procedures, do not let cooler be frosted.

### 3. Solutions for repairing and maintaining cold equipment

- a) Inspect and rectify the loss of capacity of IQF lines;
- b) Determine cooling capacity of reciprocating compressors that have been operating for several years;
- c) Keep logs for each reciprocating compressor;
- d) Inspect and promptly repair damaged or degraded equipment;
- dd) Regularly inspect and deal with residues on condensers.

### 4. Solutions for designing and reinstalling cold system

- a) Design central cooling system that utilizes NH<sub>3</sub> instead of individual equipment;
- b) Redesign cooling system so as to prevent compressors from operating at a partially loaded state and low boiling temperature;
- c) Plan all cold storage and air-conditioning systems again;
- d) Supply flake ice machines with cold water;
- dd) Transfer liquefied NH<sub>3</sub> from low-pressure container of cold storage to low-pressure container of IQF lines;
- e) Convert several cooling equipment that utilizes R22 to NH<sub>3</sub>;
- g) Replace compressors with low cooling capacity with those with higher cooling capacity;
- h) Install chest freezers for whole fish;
- i) Control floating head pressure
- k) Install inverters for compressors when necessary;
- l) Other design, installation, and investment solutions.

### 5. Solutions for using peripheral equipment to improve cooling efficiency



- a) Install additional vacuum gauges for freezing equipment to monitor suction pressure;
- b) Install CO2 sensors and heat recovery ventilators in processing room in order to improve cooling capacity and reduce amount of electricity required for air-conditioning system;
- c) Install additional auto-purgers to reduce condensation pressure and amount of electricity used by compressors;
- d) Install additional gas and water separator for cooling system.

**APPENDIX III**

SAMPLE REPORT ON IMPLEMENTATION OF ENERGY CONSUMPTION QUOTA IN  
FISHERY PROCESSING  
*Attached to Circular No. 52/2018/TT-BCT dated December 25, 2018 of Minister of Industry and Trade*

**(For use by Departments of Industry and Trade)**

PEOPLE’S COMMITTEES OF  
.....  
**DEPARTMENT OF  
INDUSTRY AND TRADE**  
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**SOCIALIST REPUBLIC OF VIETNAM**  
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*No. ....*

*(Location and date)*

**REPORT**

**IMPLEMENTATION OF ENERGY CONSUMPTION QUOTA IN FISHERY  
PROCESSING**

*Year of.....*

**To: Energy Efficiency and Sustainable Development Department, Ministry of Industry and Trade**

Implementing Circular No. ....../2018/TT-BCT dated ....., 2018 of Ministry of Industry and Trade on energy consumption quota in fishery processing, applicable to industrial processing of catfish and shrimp products, the Department of Industry and Trade of ..... hereby report the implementation of energy consumption quota in fishery processing under management:

- Number of fishery processing facilities: .....
- Number of catfish and shrimp processing facilities: .....
- Number of processing facilities that have submitted reports: .....

*In which:*

- Number of processing facilities that have qualified: .....
- Number of processing facilities that required additional supervision: .....

Details on catfish and shrimp processing facilities under management are compiled below

*Schedule 1. List of shrimp and catfish processing facilities under management*

No.	Name of facility	TIN	Processed products			Report submission status	
			Shrimp	Catfish	Other	Submitted	Not submitted
1							
2							
...							
Total							

*Schedule 2. Energy consumption quota of catfish processing facilities that have submitted reports*

No.	Name of facility	Total productivity (Tonne of products)	Total electricity used (kWh)	SEC (kWh/tonne)		Assessment	
				Previous reporting period	Current reporting period	Qualified	Unqualified
1							
2							
...							
Total							

*Schedule 3. Energy consumption quota of shrimp processing facilities that have submitted reports*

No.	Name of facility	Total	Total	SEC (kWh/tonne)	Assessment
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		productivity (Tonne of products)	electricity used (kWh)	Previous reporting period	Current reporting period	Qualified	Unqualified
1							
2							
...							
Total							

*Schedule 4. List of facilities that required additional supervision*

No.	Name of facility	Details requiring further supervision			Specific notes, if any
		Have not submitted report	Have not met the quota	Other	
1					
2					
...					
Total					

Propositions and recommendations regarding implementation of the Circular (if any):

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.....

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.....

.....

**REPRESENTATIVE OF  
DEPARTMENT OF INDUSTRY AND  
TRADE**

(Signature, full name, and seal)

SAMPLE REPORT ON ANNUAL IMPLEMENTATION OF ENERGY CONSUMPTION  
QUOTA  
*Attached to Circular No. 52/2018/TT-BCT dated December 25, 2018 of Minister of Industry and  
Trade*

**(For use by shrimp and catfish processing facilities)**

**Name of facility**  
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*No. ....*

**REPORT ON IMPLEMENTATION OF ENERGY CONSUMPTION QUOTA**

**To: Department of Industry and Trade of ..... Province/City**

Implementing Circular No. ..../2018/TT-BCT dated ....., 2018 of Ministry of Industry and Trade on energy consumption quota in fishery processing, applicable to industrial processing of catfish and shrimp products, ..... (Processing facility) hereby reports on implementation of energy consumption quota at processing facility as follows:

- Name of facility: .....
- TIN: .....
- Address: .....
- Representative: .....
- Working position: .....
- Phone: .....
- Email: .....
- Report No. ....

*Information below is compiled for the period from ..... (date) to  
..... (date).*

**1. Characteristics of reporting period:**

- Manufacturing and processing of products, services other than shrimp and catfish (such as processing fisheries, selling ice blocks, leasing storage, etc.):  Yes  No

If yes, please elaborate: .....

- External purchase of ice blocks:  Yes  No

If yes, please elaborate the number of ice blocks purchased: .....

- Sale of ice blocks/flake ice:  Yes  No

If yes, please elaborate the number of ice blocks/flake ice sold: .....

- Rent of external cold storage:  Yes  No

If yes, please elaborate: + Number of rented storage: .....

+ Duration of rent: .....

+ Total amount: .....

- Lease cold storage:  Yes  No

If yes, please elaborate: + Number of leased storage: .....

+ Duration of lease: .....

+ Total amount: .....

## 2. Electricity used during reporting period

Entry	Usage (kWh)
Electricity for the entire enterprise (by invoice)	
Electricity for other areas, activities (specify exceptions and methods of determining):	
Electricity estimated for the purchase of ice blocks or rent of cold storage	
<b>TOTAL ELECTRICITY USED: Electricity (cb)</b>	

## 3. Processing productivity in reporting period

Catfish products	
Products	Amount, kg
1. IQF fish fillet, 15% or lower glazed, once refrozen	
2. IQF fish fillet, 25% or lower glazed, twice refrozen	

3. IQF fish fillet, 35% or lower glazed, thrice refrozen	
4. IQF whole butterfly fish fillet, 15% or lower glazed, once refrozen	
5. IQF whole butterfly fish fillet, 25% or lower glazed, twice refrozen	
6. IQF whole butterfly fish fillet, 35% or lower glazed, thrice refrozen	
7. Fillet fish, whole fish, seasoned whole fish of all kinds frozen in air-blast freezers and chest freezers	
8. CF frozen block products	
9. IQF fish segments, pieces, and whole fish	
10. By-products, frozen ingredients, twice frozen products on IQF or freezers	
Other products (specify)	
<b>TOTAL CONVERTED PRODUCTIVITY(<i>qd</i>)</b>	

<b>Shrimp products</b>	
Products	Amount, kg
1. IQF fresh shrimps of all kinds,	
2. IQF steamed shrimps of all kinds	
3. Nobashi shrimp of all kinds, sushi shrimps, ebifry shrimps, shrimp ring	
4. Tempura shrimps	
5. Frozen fresh shrimp blocks in CF or ABF, frozen ingredients	
Other products (specify)	
<b>TOTAL CONVERTED PRODUCTIVITY(<i>qd</i>)</b>	

#### 4. SEC in reporting period

$$SEC = \frac{\text{Electricity (cb)}}{\text{Productivity (qd)} * 0,001} \text{ (kWh/tonne)}$$

SEC =

SEC (previous reporting period) =

Changes to SEC compared to the previous reporting period: ..... %

**5. Plan for efficient and effective use of energy for the following year**

- List of potential primary solutions: .....

.....

- Estimated total investment: .....

- - Estimated saved amount: .....

**6. Propositions and recommendations regarding implementation of the Circular (if any)**

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**Reporting individual**  
(Signature and full name)

**Enterprise representative**  
(Signature and full name)

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