
Consideration on Framework of Environmental Public Finance

Policy in China

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Abstract: The establishment of environmental finance policy has been an important and urgent task for constructing new road of environmental protection in China. In order to enhance the three major functions of fiscal policies in environmental protection, the paper discussed the establishment of a framework for environmental finance policies, which is supported by the three theories of pricing of public goods, external diseconomy, and supply of public goods, identified three key policy fields of environmental products pricing, green taxation instrument, and public expenditure policy. In addition, the paper designed the environmental finance policy roadmap and put forward specific suggestions on environmental public financing, green taxation and public expenditure.

Key words: environmental protection, public finance, policy framework, budget expenditure

The thirty years of reform and opening up to the outside world has been a thirty years of exploring the way of environmental protection in China. In general, China is still in the middle stage of industrialization with increasing pressure on natural resources and environment caused by the rapid economic growth. In the coming 20 years, the environment and resource pressure driven by China's social and economic development will be further increasing and the environmental and resource constraint will be intensifying due to the continued growth of population and fast economic development, especially as the result of traditional economic growth mode. The materialization of the scientific outlook of development has presented both opportunity and challenge for exploring the new way of environmental protection in China. To adapt to the new situation of environmental protection building up energy-saving and environment-friendly society it is necessary to expedite the development of China's environmental financial policy system, further secure the public fund for environmental protection, and promote the historic transition of environmental protection undertakings.

1 Major functions of public fund in environmental protection

The public fund plays important role in environmental protection which can lead the fund from industries and society to environmental protection while making financial input into the environmental protection undertakings. In general, the public finance is of three major functions:

1.1 Resource-adjusting function

Rational pricing is beneficial to adjusting and optimizing the allocation of resource and environmental goods. The market failure is quite common in the field of environment because the environmental goods are of the nature of public goods and externality. Therefore, the public finance must take the important function of supplying environmental protection public goods and allocating environmental resources. By means of pricing, the price leverage on resource saving and environmental protection could be fully exerted, thus adjusting the economic activities that have impact on ecological environment improving the utilization efficiency of environmental resources.

1.2 Behavior-leading function

In the context of existing taxation system, the taxes, fees, and preferential measures on environmental protection have played a positive role in leading behaviors in the whole process of production and consumption. The main taxes and fees related to environmental protection include resource tax, consumption tax, urban maintenance and construction tax, enterprise income tax, pollution charge, etc. In the new round of tax reform, e.g. consumption tax reform, the leading function of taxation for environmental protection has been strengthened.

1.3 Fund- securing function

The financial input by government is an important source of environmental protection investment being able to lead the enterprises' and social funds to be invested in environmental protection, especially the end-of-pipe pollution control. With the continued improvement of fiscal expenditure policy the financial input for environment is increasingly intensified, showing the fund securing role of government public finance in environmental protection.

2 Analysis on existing environmental public financial policy in China

2.1 Pricing of resource-environment goods and resource tax

Resource-environment goods pricing policies include relevant policies on resource-environment goods pricing, resource tax, and fuel oil tax, etc. involving the direct pricing of resource goods and environment goods and indirectly increasing the price of resource-environment goods by means of taxation.

At present, the resource and environmental constraint is increasingly prominent, one major reason of which is that the resource-environmental cost has not been taken into account with the price of resource-environment goods at lower side neither fully reflecting the scarcity of resources nor the costs of environmental treatment and withdraw cost when the resource is depleted*. Early 2007, the National Development and Reform Commission (NDRC) issued 《Suggestion on Deepening the Price Reform to Facilitate Resource Saving and Environmental Protection》 in which it was suggested that the environmental management cost and the withdraw cost be taken into account in the pricing of oil, natural gas, water, electricity, coal, and land, etc. It was also suggested in the same document that the charging standards of emission fee, waste water treatment fee and solid waste disposal fee be elevated. As one of the links of China's energy policy adjustment, the price reform not only took energy saving into account but also played significant role in promoting the development of renewable energy and adjustment of energy composition. In addition, resource tax and fuel oil tax can play a positive impact on resource allocation.

2.2 Environmental public budgeted expenditure

The accounting item: "211 environmental protection". The environmental protection had been listed as an independent accounting item in the 《Reform Scheme of Governmental Revenue and Expenditure Category》 developed by MOF in 2006 and the 《2007 Governmental Revenue and Expenditure Category》 which were put into implementation since January 1, 2007. The expenditure item of "211 environmental protection" makes environmental protection have an accounting item in governmental budgeted expenditure. This is a basic institution in environmental finance system and also a guarantee of governmental financial input in environmental protection while laying down a foundation for strengthening environmental capacity building, increasing environmental budget at local level. However, survey results show that there is no money under the item of "211 environmental protection" in some local governments.

* costs of ecological compensation for the resource depleted areas/cities

The environmental special fund. In recent years, the financial resource out of government budget for environmental protection has been increasing. The central special fund of environmental protection was established in 2004. In 2007, a special fund for emission reduction of key pollutants was established by central finance, which mainly supports the development of monitoring, indicator, and performance assessment systems. MOF issued the《Provisional Regulation on the Administration of the Special Fund for the Water Pollution Control of Three Rivers and Three Lakes” and Songhua River Basin》in December 2007, establishing the special fund for water pollution control of key water basins. In 2007, the 《Provisional Regulation on the Administration of the Special Fund as Money Award Instead of Subsidy for the Construction of Pipeline Network of Urban Waste Water Treatment Facilities》was issued in which it is provided that the fund transferred from central government to local government should be strictly earmarked for the construction of pipeline network matched with the urban waste water treatment facilities, thus giving a strong policy guarantee for the construction and operation of waste water treatment facilities. Besides, a special fund for rural environmental protection was established out of central finance in 2008, which encourages and supports the integrated environmental management in rural areas by means of money award instead of subsidy. Though the environmental special funds have provided strong financial support for environmental protection, they tends to be emergency oriented lacking long term comprehensive consideration and effective integration to form synergy.

State bonds for environmental protection. Issuing State bonds by central government has become an important fund raising channel for environmental protection. Since 1998, the construction of environmental infrastructure has been the focus of state bonds investment leading great amount of social capital into environmental protection. From 1998 to 2005, a total of 16.1 billion yuan of state bond had been invested in the construction of urban waste water treatment facilities, which had led 42.9 billion yuan of local fund being invested in waste water treatment. However, since the “11th Five-Year Plan” period, the total size of the state bond for environmental protection has been decreasing. The key environmental protection projects supported by state bonds include industrial pollution control projects in Huaihe river basin and Songhua river basin areas, chrome residue contamination treatment projects, as well as energy saving projects, etc.

Transfer payment. Since the tax reformation in 1994 when taxes had been divided between the central government and local governments, the financial transfer payment has become an important way being employed by the central government to balance the local development and subsidization. In general, the environmental factors have not been fully taken into consideration in making the transfer payment. Since 1998, the central government has increased the budget and the size of transfer payment for ecological conservation and compensation in the areas where economic development is restricted or prohibited, mainly supporting the ecological construction engineering projects, such as the “reforestation of the cultivated land” and natural forest protection projects, etc. In 2005, the central government issued 《Some Suggestion on the Further Improvement of the Ecological Compensation Mechanism》trying to integrate ecological restoration and ecological compensation by government transfer payment. In 2008, a total of 1.48 billion yuan from the central finance had been transferred to the local governments of the water source areas of the “South-to North Water Diversion Project” as an ecological compensation payment.

2.3 Preferential tax policy

So far there is no independent environment tax in China, which is still in the process of discussion. Nevertheless, there are some preferential tax policies with regard to environmental protection. For instance, the preferential treatment has been given to VAT levied on resource comprehensive utilization and waste recycling, in which VAT will be refunded immediately after its collection, or reduced by half, or exempted. In the Law of the People’s Republic of China on Enterprise Income Tax taking effect on January 1, 2008, it is provided that the preferential enterprise income tax treatment may be given to enterprises who are engaged in certain kinds of environmental protection, energy saving, and water saving projects, i.e. the income from those projects can be reduced by half or exempted. In addition, the preferential business tax treatment has been provided for by law with regard to environmental protection[2]. The existing measures in implementing the preferential tax policy are far from diverse, only limited to tax reduction, exemption, and refund, not being case-specific, and lacking flexibility,

thus affecting the effectiveness of preferential policies.

3. Consideration on Framework of Environmental Public Finance Policy in China

3.1 Overall Goal

Based on the theory of public finance and the requirement of the scientific outlook on development, and in terms of the three functions of public finance in environmental protection to: develop a pricing system of resource-environment products to optimize resource allocation; establish green taxation system to intensify the leading role of environmental protection in economic activities; set up the expenditure system of environmental public finance to strengthen the fund guarantee for environmental protection.

3.2 General thinking

The basic consideration in constructing China's environmental public finance policy framework is to integrate financial and policy resources and develop China's policy system on environmental public finance aiming at coordinating the relationship between environment and economy, intensifying government's guarantee for financial input in environmental protection, realizing green economic growth, resource saving, and optimized resource allocation. In terms of the three theories (pricing theory of public goods, externality theory, and public goods theory), the three functions of public finance in environmental protection will be strengthened thus leading the behavior in the whole process of economic activities including production, circulation, distribution, and consumption, etc., establishing resource-environmental product pricing system, green taxation system, and expenditure system of environmental public finance taking into account of the pollution control at source, process, and the end-of-pipe.

3.3 Framework design

The environmental public finance policy framework will be constructed in terms of the key functions of public finance in environmental protection and the different circulation links of resource, goods and labor[9]. The framework is focusing on three areas, as shown in Figure 1: First, to establish the pricing system of resource-environmental products that could comprehensively reflect the environmental cost and scarcity of resources and indirectly influence resource price by imposing resource tax on resource exploitation, thus realizing resource saving and optimized allocation; Second, greening and reforming taxation system, establishing China's environmental taxation system, which include structure design of China's environmental tax, scheme design of an independent environmental tax, greening the existing taxes, study on the feasibility and way of transforming administrative fees into taxes, rationalizing the establishment of taxes and fees, recommending the reform scheme of environmental tax expenditure. Third, establishing environment fiscal expenditure system and environment public finance system that is conducive to sustainable development, which mainly include clearly defining the administrative responsibility/power and financial power in dealing with environmental issues; earmarked fund for environmental protection in central budget; reformation scheme, implementation programme, and supporting policies with regard to special transfer payment for environmental protection projects and ecological compensation.

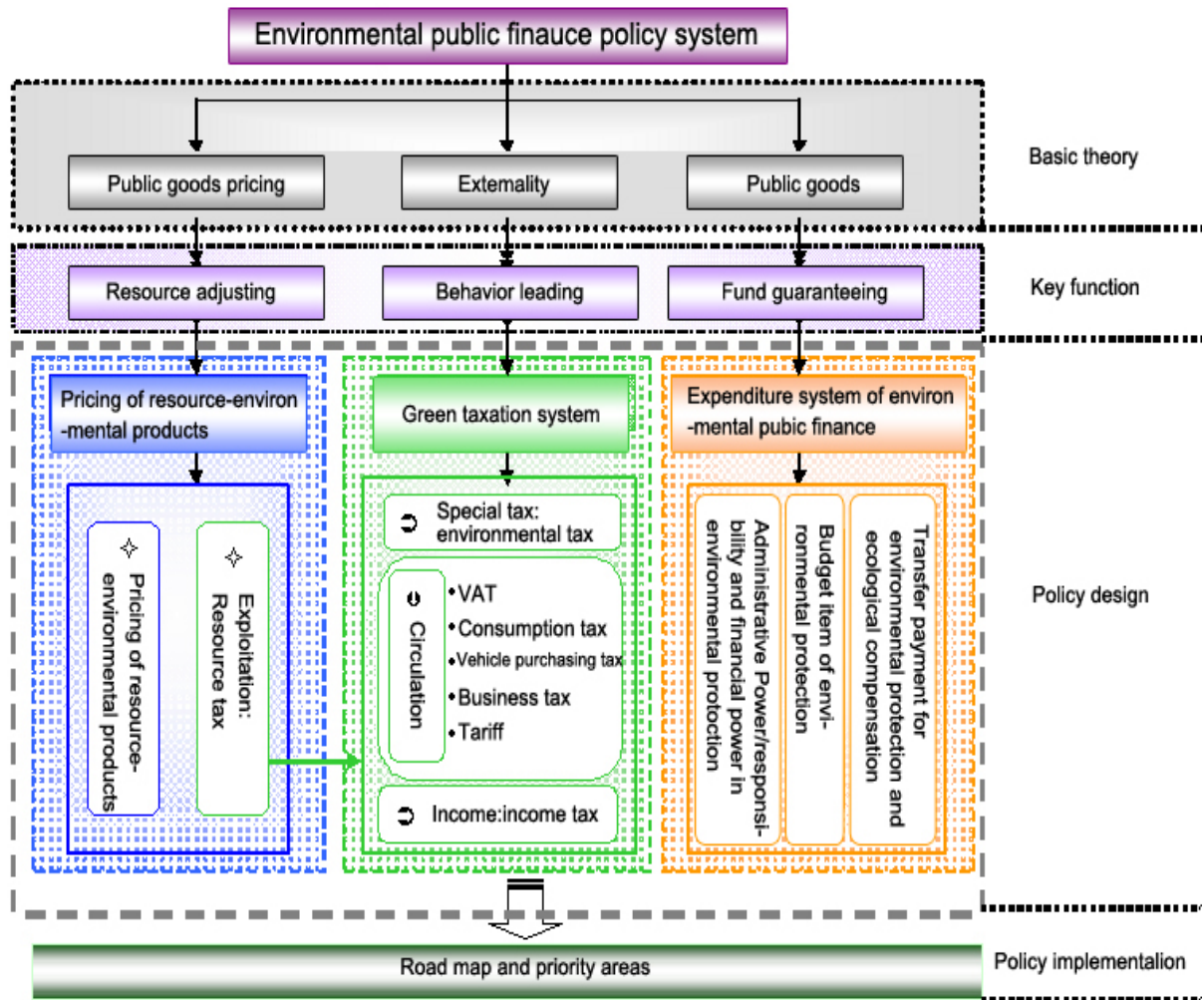


Fig 1. Policy framework of China’s environment public finance

3.4 Roadmap of implementation

The establishment of China’s environment public finance policy framework should follow the principle of from easier to harder, step by step, and making breakthrough at focused area. The reformation should be arranged on the basis of results and effectiveness of earlier reformation. Under the guidance of the scientific outlook on development and in combination with existing reformation achievements, a road map for constructing China’s environment public finance policy framework should be rationally identifies taking into account of the general trend of China’s socio-economic development and environmental protection.

Constructing framework and making breakthrough in key areas during the “11th Five-Year Plan” period

In the “11th Five-Year Plan” period, emphases have been put on the construction of the policy framework of environment public finance and making some reform breakthrough in key areas. With regard to the pricing of resource-environmental products, the price reform of resource and environment should be promoted; the preliminary pricing system for resource-environmental products should be established in accordance with integrated planning and implemented in phases. The price supervision over the monopoly sectors should be strengthened. As to greening taxation system, the reform

framework for environmental tax will be constructed; an independent tax – “environment tax” will be imposed; the greening process of existing environmental taxes should be accelerated; incorporate environmental requirements into the policy targets of existing consumption tax, resource tax, tariff, and export tax rebate as soon as possible. As for the expenditure of environmental public finance, the administrative responsibility/power and financial power in dealing with environmental issues should be clearly defined; the budget item for environmental protection should be optimized; the budget ration criterion should be set; the scope and ways of using special environmental protection fund should be optimized; pilot implementation of ecological compensation should be conducted; the ecological environment and main functional zones should be taken into account when making transfer payment.

(2) Emphasis on the establishment and improvement of the system during the “12th Five-Year Plan” period

During the “12th Five-Year Plan” period, efforts will be made in followings:

Establishing and improving the pricing system of resource-environmental products, advancing the reformation of resource tax, fully taking advantage of the leverage function of price in resource saving and environmental protection; Broadening and deepening the reformation of environmental taxation system with emphasis on extending the levying scope and optimizing the tax rate. In the meantime, the reform on fees related to environmental protection should be promoted, and the “law of environmental taxes” should be developed in order to elevate the legal status and effect of environmental taxes. Advancing the establishment of carbon tax and setting up the “national fund of energy saving and emission reduction” and “national fund of clean production” by using the carbon tax revenue; Intensifying the development of laws and regulations on environmental public finance system, in which the administrative power/responsibility and the financial power with regard to environmental protection, government’s expenditure on environmental protection, and the central special fund for environmental protection will be clearly defined; Continuously advancing the pilot work on the construction of ecological shelters in the western area and ecological compensation for the resource depleted cities. Several important policy documents will be issued to intensify the pilot work of horizontal transfer payment for environmental protection between regions and between river basins; Further developing and improving the supporting measures for environmental financial policy to strengthen the implementation of environmental financial policy.

(3) Emphasis on deepening reformation and overall advancement during the “13th Five-Year Plan” period

During the “13th Five-Year Plan” period, efforts will be made in followings:

Further deepening the reform in resource-environmental pricing to comprehensively reflect the resources scarcity, costs of environmental treatment, and the withdraw cost; Strengthening the capacity building in environmental tax administration; Deepening the reformation of environmental public finance system which should be highly in consistency with the national financial framework and supportive to sustainable development.

4 Recommendations on the development of environmental public finance policy in China

4.1 Establishing pricing system for resource-environmental products

(1) Improving the pricing system for resource-environmental products

The multiple factors should be considered in optimizing environmental resources allocation and pricing, including the economic and social bearing capacity and the relationship between pricing by the government and pricing by the market[10]. The reform of resource and environment pricing should be actively promoted, establishing and improving the price formulation mechanism that is supportive to

resource saving and environmental protection, fully exerting the fundamental role of market in allocating resources, and leading the participation of the public in resource saving and environmental protection. The pricing policy related to environmental protection and nature conservation should be reformed in order to internalize enterprise's environmental costs. Under the appropriate circumstance the price reform of natural gas could be accelerated, the cost composition of coal should be rationalized, the price reform of electricity should be actively promoted, water price reform should be intensified, the disposal method of domestic solid waste and the ways of collecting disposal fees should be reformed, the price system and market mechanism are need to be improved aiming at promoting the transition of economic development mode. By deepening the price reform, a pricing system will be established that is able to adapt to market change and comprehensively reflect the resources scarcity, costs of environmental treatment, and the withdraw cost.

(2) Accelerating the reform process of resource tax

The main reform tasks of resource finance system are reforming resource tax, rationalizing the distribution of income generated from resources, making all stakeholders be compensated appropriately. Because the resource tax is a local tax therefore the local government, as the principal beneficiary of the tax, shall take the responsibility of addressing the issues such as environmental damage and resource depletion resulted from the exploitation of the resources. It is suggested that resource tax rate for coal, oil, natural gas, and other mineral resources be raised gradually. The basis of resource tax assessment should be changed. That is to change from sale volume based assessment to sale price based assessment of the resource tax, in which the utilization efficiency of resource should be fully taken into consideration. Different or differentiated resource tax rates could be set up taking into account of factors, such as resource property, geographic location, and exploiting conditions, etc. In the long term when conditions are mature, the levying scope of resource tax could be extended to cover water resource, forest resource, and grass land resource, realizing the protection of all natural resources. The utilization efficiency of resource should be taken into account in resource taxation, offering preferential tax rate to the enterprises that have shown high resource utilization efficiency.

4.2 Developing green taxation system

To establish a green taxation system is not only in accordance with national environmental targets and the scientific outlook on development but also raising the fund needed for environmental protection and reduce the loss caused by pollution. Green taxation includes both independent environmental taxes and “greening” the relevant environmental taxes.

(1) Speed up the process of imposing independent environmental tax

The process of developing and imposing an independent environmental tax should be expedited. An independent environmental tax should be added in the existing taxation system that is parallel with resource tax, VAT, etc. Efforts should be made to get policy breakthrough in the “11th Five Year Plan” period. There will be different kinds of environmental tax based on different levying links and tax bases. It is suggested that four tax categories – pollution discharge, polluting products, carbon emission, and ecological conservation – be established.

(2) Promote the greening of taxation

Develop and improve the environmental taxation policy system and elevate the green level of existing taxes. The preferential treatment to consumption tax, VAT, business tax, tariff, and export tax rebate in terms of environmental protection should be further intensified and broadened thus strengthening the incentives of environmental protection to economic activities. If it is difficult to establish the tax category of polluting products, then it can be considered to add new categories in consumption tax covering phosphate detergent, cadmium-mercury oxide cell, ozone depleting substances, over packaging material, disposable (throw-away) dishware that may pollute the environment during or after their use. The consumption tax could be exempted for clean energy (biomass energy). In the long run, coal resource consumption tax may be added putting coal, coke, and thermal power - heavy

polluting and highly energy consuming products into the levying scope of consumption tax. The environmental protection products/equipment may enjoy preferential rate of VAT thus promoting their market competitiveness and their use by enterprises; The preferential policy on VAT given to products produced through the comprehensive utilization of waste materials and resources should be further improved. With regard to the business tax, the preferential treatment of tax deduction or exemption will be given to the income earned by environmental technology transfer, consultation, information, and technical services; the preferential treatment on business tax will be given to the income earned from constructing environment-friendly building. Based on the current policy that for the resource-based, heavy polluting, and highly energy-consuming products the export tax rebate will be cancelled or the rebate rate will be decreased. The application scope of the policy should be further extended. The existing restriction policy on tariff and export tax rebate applicable to the resource-based, heavy polluting, and highly energy-consuming products should be further improved, making them bear the corresponding environmental costs. Preferential policies are made to encourage energy and resource saving and emission reduction. In addition to the existing direct preferential treatment of tax reduction/exemption and zero tax rate, various kinds of indirect preferential tax treatment may be employed according to the specific targets and circumstances, such as accelerated depreciation, investment for tax credit, deduction of taxable income, and deduction plus, etc. The policy coordination between preferential treatment of environmental taxes and other taxes should be considered to avoid policy conflict and resulting failure of environmental taxation policy.

4.3 Set up the expenditure system of environmental public finance

(1) Rationally define government's administrative power/responsibility and financial power in environmental protection

First, clearly define the responsibility of government, market, and the public in environmental protection and pollution control. The core is to put the responsibility of local government and enterprises in place with central government mainly providing policy and financial guidance; second, develop a regime in which the environmental responsibility is matched with financial power, and the administrative power/responsibility and financial power in environmental protection between the central government and local governments are clearly defined. It is recommended that the legal instrument be developed in which the division of administrative power/responsibility and financial power in environmental protection between central government, provincial governments, and municipal/county governments should be well identified.

(2) Budget item of "211 environmental protection"

The fund securing mechanism should be addressed after the establishment of the budget item for environmental protection, intensifying the fiscal guarantee and broadening the fund sources. In reference to the experience in fund administration in other relevant departments (agriculture, science and technology, education, and family planning), the financial input for environmental protection should be increased. If condition allows, the ratio of environmental protection fund in fiscal budget should be determined or the environmental fund should be increased at a rate corresponding to the growth rate of the fiscal revenue. The transfer payment to local government should be increased in order to further guarantee the fund for capacity building of local environmental protection departments and for environmental monitoring, supervision and enforcement.

(3) Intensify environmental transfer payment and ecological compensation

Speed up the establishment of transfer payment system for ecological conservation and environmental protection. In making the governmental general transfer payment and special transfer payment, due consideration should be given to environmental factors and key functional zones. The existing transfer payment projects should be sorted out and reduced. A special transfer payment for key functional zones should be established with transfer payment coefficient to be determined based on the comprehensive ecological effect of the functional zones. The calculation method of transfer payment need to be improved, using "factor method" in stead of "benchmark method". Establish and gradually standardize

the horizontal transfer payment based on environmental factor between regions.

Accelerate the process of developing ecological compensation mechanism and policy system. First, establish river basin ecological compensation fund by means of fiscal transfer payment, water and power surcharge, and etc. The standard of ecological compensation should be developed in accordance with the principle of fare utilization of the river and tailored to local circumstances. A rational assessment indicator system should be developed as the basis of ecological compensation for river basins. Second, the “guarantee money for eco-environmental remediation” and “eco-environmental remediation and treatment fund for abandoned mining areas” should be imposed on mining enterprises, which will be used for dealing with the eco-environmental issues caused by mining and left by the abandoned mines. Third, speed up the development of the ecological compensation standard system for nature reserves. The money of transfer payment for important ecological function zones may come from the government finance or the revenue generated by imposing ecological conservation tax. Fourth, intensify the transfer payment of the central finance for the construction of western ecological shelter by establishing governmental assistance fund, etc, and taking the construction of key function zones as a platform.

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