

STUDY ON THE GREEN TRANSPORT IN BI-TYPED SOCIETY CONSTRUCTION

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Abstract: It is well-known that contemporary logistics is the engine for social development in modern era. Both of the natures comply with each other to construct bi-typed society and to develop green logistics. BTSC demands greenized management on logistics and transport as a column activity has to be greenized, too. On the basis of BTSC the paper explores for the developing programme and requirement for green transport and analyzes the effects and significance from green transport on BTSC and enterprises' construction and puts forward the measures to develop green transport.

1 BI-TYPED SOCIETY AND ITS BACKGROUND

"Bi-typed society" implies resource-saving and environmental friendly, which through high-efficient and recycling utilization, rational allocation and effective protection, suit the economic social development to the environmental capacity of resource and cast a sustainable development and harmonized community between human being and nature. It is crucial for the construction of resource saving and environmental friendly so that it is possible for human production and consumption to co-ordinate with natural eco-system. BTSC represents human developing notion for the time being, which is also the protruding social attributes.

Entering millennium, China has been in a golden boosting age. Its economical and comprehensive powers and international position have been lifted, bringing industrialization, urbanization, marketization and internationalization a fast pace. However overallly, the primitive-type economy remains with little improvement. The low utilizing efficiency, bottle-necks, pollution etc. have not been modified.

Concerned data show our energy consumption increases rapidly with the major raw materials consumption surpassing the growth of GDP. The Chinese demands for energy and raw materials expand swiftly causing profound impact on international market. In comparison with developed

countries, China's energy utilization is much lower. The environment deteriorated, water pollution and so on. Those give rise to the unfavourable influence on people's health and restriction for the sustainable development of our economical society.

Against this fact, Central Committee called for the construction of resource-saving and environmental friendly society and further indicated to enhance energy-resource-saving and eco-system protection and the ability for sustainable progress. That is no doubt a great and scientific strategy for the promotion of our economic society. BTSC is not at all to simply keep and hold resource, but to insist on production forwarding, living flourishing and eco-system cleaning, realizing speed, structural quality and efficiency uniformed, economic progress harmonized with population resource environment. Thus makes an excellent eco-system for manufacture and life, which has the following characteristics:

- Harmonization. BTSC is a brand new social developing mode concerning man and nature co-existing. man and man overallly harmonization in community. BTSC is the essential content for erecting harmonized society or inherent requirement for scientific progress. glancing at its nature, resource environmental issue is between man and nature in harmony, in fact also a social relationship between and men in harmony.
- System Compounding. BTSC's attribute lies at system compounding correlated to overall

respects as society, economy and culture. Resource issue is one about the nature, economy, society, politics, technology and concept for culture as well. Those issues cross and affect mutually. BTSC is also a interaction, made up of technology, products and enterprise for saving and friendly, participated in by social organization and public.

- Comprehensive Participants. Bi-typed society is a society in which the government, enterprises, social organizations and public participate. The formation and evolution of bi-typed society need not only the promotion and guidance from government, enterprise active participation and support, but also the total society's fostering the urgent notion about natural resource and eco-environment, forming a real agreement on BTSC and putting the idea in daily life.
- Open-Up. BTSC radical requirement aims at building scientific developing system of resource-saving and environmental friendly. Those fields are demanded to be opened, co-operating and reforming, such as the renewing of system, mechanism, enterprise development and various organizations and public participants. Self-sealed make can't be adopted at all. However all those should be refused as consumption of resources and pollution of eco-environment.
- BTSC Renewing and Promoting requires reforming and renewing. In order to create new mode, new technology and new system, the obstacles in the system renewing course must be swept out and the self-renewing ability should be the centre section.

2 GREEN LOGISTICS AND GREEN TRANSPORT

Green logistics is defined to sterilize logistics environment having sufficient usage of logistics resource in the process of logistics to restrain harmful logistics in environment. This includes the overall greenization, logistics front activities and logistics management. Viewed from process steps, they are green transporting, warehousing, packaging and distribution processing and so forth. From respect of logistics management course, mainly environmental protection and resource saving, it is important for logistics system, considering positive logistics, greenization and reverse logistics greenization in supply chain. Commonly speaking, 3 targets must be bitten to implement green logistics

management. First, to realize co-existing logistics, which explains that never elevate logistics efficiency at the cost of environment and sacrifice of eco-system. Nevertheless should actively and effectively take technical measures to bring the progress for both logistics and environment. Secondly, realizing resource-saving logistics through contractual, scientific and rational allocation of ERP for the optimum utilization of various materials. The final targets are output/unit resource reaching maximum, minimizing waste in the course of transport, packaging, warehousing and distribution processing. Third, recycling type of logistics with precaution-oriented countermeasures and overall process flow of production and operation to minimize the wastes, retrieve and recycle the by-products, packages, scraps and garbage. This is called resourcing again. Those 3 targets are mutually connected and controlled with realization for those 3 targets. The targets of enterprises are in line with the social progressing target, environmental improvement and win-win is available between enterprises and society. Therefore green logistics' ultimate aim is at sustainable development and realizing criterion is the co-ordination among economical, social and environmental interests.

Green logistics has much high standards in comparison with normal logistics activities. The former requires acuter and complexer. Normal logistics is meant for the profits of logistics enterprises, satisfying the customers and enlarging the proportion in market shares. All in all they serve certain bodies in economic income. Green logistics apart from the above targets for economy, pursues resource-saving and environmental protection treating both economic and social favours. It is strictly demanded for green logistics in operational conditions. Usually each index for environment will be adopted for green logistics, too. For example, those indexes contain noise, exhaust, dust and vibration. If judged satisfied, will be authenticated to encourage and vice versa.

Green transport is attributed with resource-saving and exhaust minimizing. The implementation mainly encompasses reasonable selection of transport means and routes, getting rid of repeated carriage so as to save energy and reduce exhaust. Improving internal-combustion technology and adopting clean fuels to increase capacity and preventing leakage on route lest local severe deterioration in environment.

Green transport, judged from sustainable development, saves energy and resource, diminishing pollutions and protect natural

eco-environment. Those are fundamental demands of sustainable development on green transport. As to developing countries, communication is still an indispensable factor controlling the social economic progress. Therefore it is significant for our nation to establish the traffic network and infrastructure, which can satisfy Sustainable development. In practice it is necessary to further strengthen traffic communication and infrastructure erection and try its growth in match to the requirement from social economic development. The traffic network layout should be suitable to the needs of industries and agricultural production and population distribution. Moreover when progressing traffic infrastructural building, the impact should be paid attention to, which road construction causes to eco-social environment. In addition, the existing facilities need modification, especially the effective measures should be taken to minimize the consumption of scarce earth resource, while the new network is emphasized on to erect. As to the 5 modes of transport like, railway, road, waterway, air and pipe, should be guaranteed mutually coordinating and avoid repeat erection, on the basis of which all advantages of individual modes can be engaged. Compound in one transport is combined with those 5 transport types to save energy, environmental protection and realize to the greatest extent the sustainable green transport. The following measures may be applied.

- Inter-Modal Transport. In terms of experience from developed countries, it is an effective way to implement inter-modal for logistics greenization, which reduces packing cost, damage of goods or short weight in transit. It overcomes the inherent shortage of individual modes, selecting the optimum route and integrating each modal. It generally guarantees the optimum and efficiency for the whole transport and also reduces the energy, waste and environmental pollution. On the other hand, in terms of logistics channel, this resolves well the commodity separation in space and time caused by geography, climate, infrastructure and various marketing conditions. The combination between production and sales is strengthened, enterprise production and operation run smoothly as well. It is not at all pure transport method transfer, but also the conscientious of transporting enterprises and carriers.
- Consolidated Distribution. As a contemporary circulating organizational mode, distribution Integrates business, logistics and information in

one, which is a peculiar operation for logistics. The transport is defined as commodity and service movement between two ends far from each other while on the opposite side, short distance, small quantity, but high frequent movement is named distribution. Consolidated distribution is organized by multi-encompasses for local customers with minor quantity and LCL and low utilization of vehicles. Consolidated distribution can lift to the top efficiency for HR, materials, capacity, time and resource. At the same time, unnecessary crossing carriage may be eliminated, relieving the traffic, protecting the environment for the society. For enterprising circle, the way to realize consolidated distribution. saving energy and preventing environment from pollution is to promote logistics greenization.

- Paperless Business on Electronic Transaction. There is a tendency of multi-item and small quantity requirements. It demands the handy and reliable enterprise information system. Therefore It is crucial to elevate the logistics system and operating efficiency by way of: establishing stock control information system, distribution system, customers' information system and decision making system, cargo trace and vehicle management system. Furthermore improving the operating information platform between enterprises and connect individual networks forming uniformed management and coordination. This can enlarge logistics service and distribution space for the purpose of sufficient utilization of logistics resource.

Logistics transport greenization aims at diminishing energy consumption in transport, waste exhausting and occupying road through effective logistics systematic progress and control while guaranteeing the service target as a premise. Thereby we insist on principles in the practice Of transport greenization: safety, on time and accuracy, electronic effect in conformity with environmental effect, people and vehicle management in combination on the basis of these 4 principles through technical improvement to relieve actually the influence on environment caused by various transport materials. Select and utilize those modes towards environment, establish the managing system for drivers training and performance, carry out urban logistics system programme to realize the target.

In the meantime against the situation that logistics gradually evolves from manufacturing to a two-way with sales added. The correlation of logistics penetrates consuming fields. It is regarded

that logistics management of all-directional development should be pushed from the vision of environmental co-existing. However environmental co-existing logistics is just the achievement guided green logistics. Hence transport as a core of logistics appears especially essential to deploy greenized management.

3 THE UNIFORMING OF MODERN LOGISTICS AND BTSC

Logistics suits the requirements from social production, applying information technology and supply chain management. It integrates transport, storage, handling, packaging, distribution process, distribution and information process, which is a new industry and also a compound service by the crossing among transport, warehousing, traffic forwarding etc. It concerns to a comprehensive field employing more labour, promoting production, initiating consumption. It is an indispensable part of national economy, engaged in enterprise structure adjustment, modifying economical development mode and enhance our national economic competitive power. As the economical globalization and information pace are boosted logistics enterprises have become a benchmark against a nation's modernization and comprehensive national power. Naturally it concludes that logistics develops closely to the economically social progress.

Contemporary logistics belongs to green logistics, which requires a modification to the logistics system viewed from environment, forming environmental co-existing logistics system. This logistics system is founded on the basis of environmental protection and sustainable development. The single directional effecting relation should be improved between the past economical development and logistics, consumption and logistics. When restricting traditional linear logistics harm to environment, a brand new attitude and concept should be adopted for harmonized treatment to environment. To design and set up an environmental and recycling type can lead to retrieval flow from traditional logistics end to normal logistics course. Modern logistics emphasizes on long term and general interests, concerning to environment and reflecting the responsibility sense of enterprises. For example the Ministry of Traffic Transport has promulgated "Resource-Saving, Environmental Types of Road,

Waterway Traffic Developing Policy." Pinpointing the guidance and fundamental policies to push the green logistics, transfer the developing mode, gradually fostering the ability of 3 services. That is a transport guarantee for a Faster and better development of economic society.

It sufficiently shows that modern logistics enterprises complies fully with the inherent requirement for BTSC, which explains as, the requirements for low investment with high output, low energy consumption with minimum exhausting, recyclable and sustainable national economic system and resource-saving, environmental friendly society. Resource-saving society implies the entire social economy built on resource-saving basis, the column of which is to save energy. Environmental friendly society is a social mode with human being and nature in harmony, the column of which is a coordinate development of human being production and consumption with natural eco-system. That is to say, economy can not develop at the cost of environmental sacrifice. On the contrary it should be on principle of optimum structure, high efficiency, low consumption and environmental protection. Through the radical analysis on BTSC and logistics enterprises we can draw the following conclusion.

Modern logistics industry fits BTSC in terms of attitude and effect. Promotion of modern logistics industry has the same inner requirements as BTSC. The realistic significance for BTSC is to push the development of modern logistics industry.

Green transport is not only essential for environment and social economic sustainable advancing, but also brings tremendous economic efficiency for the enterprises. More and more enterprises have recognized the importance of green logistics, which has been clarified valuable for both the society and enterprises.

- Green Transport assists social economic sustainable development built on the basis of protecting the global environment. It lays stress on the entire transport course applying the notion and measures harmonized with the environment, diminishing logistics harm on it, avoiding resource-wasting, favouring social sustainable advancement.
- Green transport in favour of responsibility sense and competitiveness of enterprises. A favourable reputation should be established while chasing the profit. Green transport building is beneficial for enterprise: consolidate brand value and lifespan, extend product life cycle, which indirectly strengthen enterprises' competing power.

- Green transport is beneficial to reduce the operating cost. Green logistics pays more attention to greenization and energy saving with less pollution that production is largely reduced.
- The developing strategy for green transport. Green transport represents future. The competition in energy and resource has become a vital part of potential development for every country. In the post-crisis era, saving and exploring has become first and foremost issues while energy-saving and exhaust reducing should be laid stress on to traffic transport. It is not only beneficial to carry out international obligation, but also to traffic transport with healthy and consecutive progress.

There is a general guidance as, publicity, science and technology, system and regulation and implementing, as follows:

- Government control. Policy and law should be promulgated. At the beginning of transport greenization, government should pay great attention to it making and perfecting law and provisions. Dependent on law and must be so, and seriously dependent on law, offenses be punished by law. Rewarding and punishing Acts against saving and reducing must include taxation, finance, economy and administration. For instance, strict standards for transport vehicles, abolishing old and high-consuming vehicles and deploy a comprehensive study on applicable technology for energy-saving and exhaust reducing. Both economic and financial measures could be taken. The policy preference should also be given in road tax and passing fee so as to guide the enterprises purchasing and applying energy-saving, environmental-protection and standard vehicles. Administration is implemented to perfect the provisions of classification and types Recommendation for vehicles, promoting advanced and saving types, overallly leading a smooth transport greenization.
- Concept Transfer. Awareness of all-participation is the newest concept for green transport which requires enterprises based on sustainable development in long term vision for benefits. That demands enterprises' leaders and stuffs modify to found a concept of all-participation. Energy-saving and exhaust-reducing is a systematic project in need of dept. co-op, further more enterprises' leaders presence and comprehensive, profound and long term propaganda, which at last makes all stuffs a conscious behaviour. All-participation also encompasses enterprises' guidance with green concept, the programme and product structure, actually making the green programme, implementing green project. To those workers on the front site, education of green concept and products, perishing environment is necessary. Thus the concept of environmental protection, eco-system and green is people's insight.
- Green Transport Process Flow. This includes transport restructure for handling in time and in safety, storing and processing in fresh and stable quality, packing, information processing in health, environmental protection and non-damage in any sections. Thereby enterprises should first select green transport tactics implementing consolidated and uniformed transport, which reduces total movement including transferring to railway, sea and air carriage. Efficiency of distribution can be increased by sufficient utilization like: to use green traffic means to lower exhaust. And then consolidated distribution should be adopted to reduce pollution. This is done by small and medium enterprises of the same industry or same region. It uniformly consolidates the goods and distributes to reduce the cargo-flow diminishing crossing carriage. It can also lift the efficiency for municipal freighting with reduction of empty-loading and transporting. This as well improves service, lowers the stock to just in time.
- Implementing green marketing strategy. The so-called green marketing is still on conventional basis but emphasizes on 3 sides' benefits uniformed. They are, consuming, enterprises and environment. This is a kind of comparatively advanced social marketing. Green working pays much more attention to environment than social logistics. Implementation of green marketing firstly lets enterprises enhance their own international competitiveness in environmental protection. On the other hand, as enterprises undertake correlated social obligations, it gives rise to the effect on public consuming behaviours. Therefore, the utilization of green marketing promotes green product sales.
- Enforcing transport organization management. Through this a central city, regional economic circle and a public transport information platform can be actively constructed. In addition, through commonly sharing transport

market information, empty-loading can be reduced, lower carbon economy is realized for green supply chain operating mode, sharing virtual operating preference. An energy-saving assessing system for transport enterprise should be founded for route approval and resource allocation preferred for energy-saving type. Comprehensively deploying public traffic and rural passenger transport as well as water way that satisfies bulk goods transport. Erection of encouragement and restriction is a way towards higher organization of logistics.

- Actively training talents for green transport. QC group enforces all-stuff awareness for resource risking, energy-saving, environmental protection and "DIY" to train their operating skills with less energy. For instance, contests for green drivers advocates green drive and energy-saving sense. Transporting enterprises offer more training and advice of oil-saving against interior operation. Combining energy-saving, consumption reduction with drivers' performance assessments. This is in assistance to resource-saving and environmental friendly industries.
- Foreign advanced know-hows may be borrowed, introduced and digested. Owing to the global trading, road transport quantity increases causing green house exhausting as one of the majorities. Scania has put forward a general solution integrating old with new concepts against sustainable traffic. His proposal calls for the use of recycling fuel, multi-power technology, drivers' training and higher-efficient logistics system. Scania trucks forged green transport system, estimated to reduce exhaust by 50%, which is especially worth learning and borrowing.

4 CONCLUSIONS

Proved by practice both domestic and abroad economies, no exception, that high-efficient environmental protection is economic developing life for modern logistics. Modern logistics breakthrough from green transport, which casts the condition for Bi-typed society construction. Environmental friendly realizes the sustainable development for society, economy and environment.

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