



## **Submission by iMOVE Cooperative Research Centre**

### **to the Independent Review of the**

### **Ports and Maritime Administration Act & Port Botany Landside Improvement Strategy**

#### **Introduction**

iMOVE is Australia's leading applied research centre in the transportation and mobility sector. Since its inception in 2017 iMOVE has had a focus on utilising emerging technology, including information technology, to improve the end-to-end performance of supply chains. iMOVE's response to the options proposed by the Independent Reviewer of the Ports and Maritime Administration Act & Port Botany Landside Improvement Strategy is based on this perspective.

From this perspective of improving the performance of supply chains 'from end-to-end', we reflect that the primary challenge for all Australian ports is to expedite the movement of full containers from onboard the berthed ship to the final (container) destination. Naturally, the reverse applies for export of Australian goods and surplus empty containers. This process is subject to various constraints and pressures, such as: limited capacity to hold containers at wharf-side, pressure from ultimate recipients to receive their goods as quickly as possible, and community concern over the contribution that container trucks make to road congestion.

iMOVE contends that the formulation of any regulations regarding the operation of container trucks and trains needs to be informed by, and aligned to, a well-considered system for movement and distribution of inbound containers. We are confident that the development of a system perspective over the movement of containers from shipside to customer location (or at least deconsolidation point) would enable significant improvements to supply chain performance, operator efficiency and community satisfaction. We note the initiative of TfNSW and port participants to develop a Port Community System and we hope that this could provide the context for adoption of an end-to-end perspective on the container supply chain.

#### **Recommendation: We recommend that the system approach to container movement in NSW be refined and strengthened.**

A strength of a systems approach is its acknowledgment of the interdependence that exists between process participants. Noting that the process of moving containers from ship to landside destination involves numerous independent parties, the challenge to establish an effective and robust system quickly evolves to questions of information flow, transaction burden, pricing, and competition for share of the available gross margin.

Better information (and data) leads to better decisions, less waste and frustration, better visibility over operations and discouragement of bad behaviour. We acknowledge the great improvement in data gathering and information sharing that has been and continues to be achieved under the PBLIS regulations. All stakeholders are pleased that PBLIS successfully resolved the problems of truck queuing, delayed servicing and road congestion that plagued the Port Botany area. In these respects, Port Botany, through PBLIS, set the standard for the rest of Australia to follow.

And yet we still have problems. For example, the current focus on truck turnaround times and the time slot release system may push truck operators to take only one container per trip instead of the two, three or four that they could take. This leads to underutilisation of truck capacity, increased labour and fuel costs and worsening of road congestion. Conversely a truck operator and end customer may want to both return and collect multiple containers at port for a single trip



to a final destination but cannot do so due to the complexity of the return and pick-up transactions.

We conclude that despite the best intentions of all parties, the current multiplicity of slot booking systems (at multiple stevedores and empty container parks), and the lack of cross-system visibility and interoperability impose significant productivity losses on the container movement process.

**Recommendation: We recommend the development of a port wide vehicle booking system (or system of systems) that supports and serves the stevedores and Empty Container Park (ECP) operators, and that enables truck and train operators to optimise their combined port operations.**

Application of a systems approach

We appreciate the complexities inherent in the process of expediting the movement of containers from diverse ships at separate times to varied final destinations. However, we believe substantial improvements will become available when we view the challenge in its entirety. We expect that a 'whole system' perspective would enable productivity gains in the following areas:

- Truck movement optimisation through visibility on a single platform of all movement tasks
- Greater use of multiple containers per truck to and from the port
- Greater use of out of hours pick-up and delivery times for customers
- Greater use of intermodal hubs as an overflow / out of hours / pre-positioning point for containers that can only be moved during normal business hours and encourage out of hours delivery to the intermodal **by road** in addition to its role to receive and deliver containers by short haul rail.
- Integration of empty container movements into the total container transport task
- Integration of customer warehouses and distribution centres into the transport system and unified vehicle booking system.

To drive improvements in the productivity of the NSW container supply chain, we propose the following measures.

- Monitor and incentivise more containers (import and export) per truck trip
- Monitor and report on a truck turnaround times on a consistent basis at stevedores, ECPs, and intermodals
- Incentivise and establish pick-up and delivery of containers out of normal hours (perhaps by time-of-day pricing for slots and potentially also time-of-day pricing for the road network. Once defined, the pricing needs to be fixed to provide certainty to operators and end customers
- Review slot 'time zones' and corresponding pricing, to take into account peak, shoulder, and non-peak activity at port, on the road network and at customer delivery sites (Noting again that once the time zones and pricing is established, the arrangements need to be fixed to give operators and customers certainty over costs)
- Establish productivity measurements over all aspects of container movement from the time they are taken off the ship to their delivery to final destination (and vice versa for exports and empty returns)

**Recommendation: We recommend implementation of harmonised, port wide reporting of key performance metrics**



## **Response to Options Paper**

### **Act Option 12 - Mandate information and data formats and types for vessel manifests and that these be provided to the NSW Government**

iMOVE supports the principle of national data harmonisation with a view to creating metrics that can lead to better decision-making about supply chain productivity and safety. This requires relevant data to be collected and published publicly.

iMOVE supports the adoption of principles including that data should be collected:

- Efficiently
- Cost-effectively
- Only by the most relevant party (unless it is automated)
- In a repeatable format that allows regular and harmonised collection
- In a way that protects commercial confidentiality through aggregated and anonymisation
- In a way that recognises its commercial and competitive value in the market
- On a nationally consistent basis, in a nationally consistent format and shared nationally and publicly.

iMOVE supports mandating a nationally consistent standard for supply chain data (EDI is a good option for discussion between all governments and commercial operators).

Act Option 12 implies vessel owners have the data as defined or the capacity to require it from those who do, are efficient and effective agents for gathering the data and meet privacy and commercial confidentiality requirements. If so, we support the vessel owners gathering and sharing this data. However, if this is not the case, then iMOVE would support an appropriate alternative data gatherer undertaking this task. Any new data gathering requirement should first be checked to see whether the data is already being gathered and made available by someone else (such as Customs).

We also support collaboration with other state and territory jurisdictions, the National Freight Data Hub, the Australian Customs Service, and others as appropriate.

### **PBLIS Option A1 - Apply late penalties per truck not per container**

iMOVE supports this option as a vital efficiency and density measure and an encouragement of good behaviour.

### **PBLIS Option A2 - Investigate options for stevedore impacted trucks**

Supply chain productivity improvements have the potential to increase the international competitiveness of our economy and are therefore important areas for focus. By their nature, supply chains stretch from producers to consumers and an efficient supply chain meets the needs of all participants along the chain. An effective supply chain must also satisfy requirements for “reliability” and “capacity balance” in addition to cost and speed. Best practice, therefore, requires a supply chain to be viewed from end to end. We need to recognise the risk that productivity improvements at one point on their own, may reduce productivity at another point and may diminish the overall effectiveness and reliability of the supply chain.

To maximise the flow of containers along the supply chain there needs to be clear visibility to all participating stakeholders. Access and pricing arrangements need to be aligned to encourage operator behaviour that maximises the flow of containers rather than maximising the extraction of profit through the exercise of market power.



To this end, iMOVE recommends the establishment of a Vehicle Booking System covering the entire port including Empty Container Parks that embraces existing systems and provides interoperability between them. We expect that such a system would create visibility over the disposition of all containers to be moved, all vehicles involved in moving the containers and a mechanism to build the forward schedule for all operators. Its purpose is to improve the flow across the whole supply chain. It should ensure port property facilities, empty container parks, vehicles, containers, rail heads and stevedores are productively utilised. It should also ensure the supply chain partner with “control” at each step bears the responsibility and wears the costs of ensuring equipment is where it needs to be, when it needs to be there.

Ultimately the final customer must also become engaged. The strength of the customer’s preferences for the delivery window for the container has the potential to complicate (or simplify) the operation of the supply chain. Ultimately the pressures that customers impose on the supply chain need to be reflected in the pricing they receive. When costs to supply chain efficiency are revealed, it may motivate the development of alternative arrangements. For example, a customer may prefer to receive a container at 8am to allow a full day’s work on site and may not have anyone available to receive it out of hours. If the incentive were right, and the supply chain focus was on getting more containers out of the port, the customer may be prepared to have someone take delivery out of hours. Inland container terminals, whether designed for short haul rail from ports or for truck lay-down and de-consolidation, may be able to respond to this opportunity by acting as an intermediary between an out of hours movement of the container out of the port and a narrow delivery window at the final destination.

#### **PBLIS Option A7 - Improve road data transparency**

iMOVE supports PBLIS Option A7 and proposes the decisions about who the data comes from, the data standards used, the regularity of collection and so on be guided by the principles for data collection described in our response to Act Option 12 above. Wherever possible data should be generated and collected automatically and electronically, rather than manually.

#### **PBLIS Option B11 - Differential pricing for peak and off-peak**

iMOVE supports PBLIS Option B11 on the basis of the principles and recommendations above including the adoption of better-defined peak, off-peak and shoulder periods. Differential pricing should reflect system capacity at the port, at ECP’s, on the road network, at intermodals and at customer destinations. Once established the new pricing would need to be fixed, in order to give operational certainty to all stakeholders.

#### **PBLIS Option B13 - Empty container storage facility data transparency**

iMOVE supports PBLIS Option B13 and proposes the decisions about who the data comes from, the data standards used, the regularity of collection and so on be guided by the principles for data collection described in our response to Act Option 12 above. ECP utilisation and turnaround times should become a core part of a well-functioning PBLIS given that the activity and productivity of ECPs are pivotal in the broader container supply chain and create dependencies for transport operators in meeting stevedore and shipping line deadlines.

#### **PBLIS Option B14 - Freight Community System (FCS)**

iMOVE supports PBLIS Option B14 and proposes the decisions about who the data comes from, the data standards used, the regularity of collection and so on be guided by the principles for data collection described in our response to Act Option 12 above. PBLIS Option B14 has the potential for important longer term productivity gains and should be considered in the context of the range of other productivity measures proposed in this submission.



### **PBLIS Option B15 - Second Truck Marshalling Area (TMA)**

iMOVE supports PBLIS Option B15 and suggests the investigation take into consideration the productivity improvements (and therefore reduced marshalling yard utilisation) that could occur from our other recommendations. To assist drivers to manage their timeslot-specific tasks (at stevedores and ECPs) and to reduce queueing, dawdling and time-filling circulation on public roads, TMAs should be used to the maximum possible. Given the challenges of managing arrival times in unpredictable traffic, it may become desirable to expand the availability of 'temporary pause' locations for trucks.

### **PBLIS Options D20-23 – Better utilisation of rail**

iMOVE supports PBLIS Options D20-23 and sees numerous potential benefits from an increase in the proportion container movements to and from the port could be carried by rail. However, we also recognise the challenges to get alignment in policy and operations of the stakeholders involved. We urge the parties to persist in their exploration of options and negotiation of mutually acceptable solutions such as out of hours running and breaking long trains at metro IMT's and enabling the sections to be taken to port by the shuttle process.

**Ian Christensen**

**iMOVE Co-operative Research Centre**

**29 July 2022**