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AAPA

What are the drivers for automation of container terminals on the projects being designed today?

- **Economics**
- **Environment**
- **Efficiency**
- **Safety and health**

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- **Economics**
 - On the West Coast, because of the long pause in terminal construction and increased costs of construction and environmental compliance, new terminals built with today's dollars cannot compete unless they are automated
 - The lines want to steam slower with larger vessels
 - In order to do that, they require higher vessel productivity with reliability, predictability and consistency
 - Requires an increase of about 45-50 gross vessel moves per hr, 6-8 gross moves per QC per hr, about 30%
 - New terminals are being designed to turn vessels with 12,000 moves per call within four days with headroom
 - Reduced total cost per move is always a goal in the container shipping and terminal business
 - Projects built today require longer economic payback and that helps justify the increased capital first cost of automated handling systems

What are the drivers for automation of container terminals on the projects being designed today?

- **Environment**
 - **West Coast development permits require electrified container handling equipment and it is the right thing to do**
 - **Slower steaming is the right thing to do**

What are the drivers for automation of container terminals on the projects being designed today?

- **Efficiency**
 - **Electrified, automated container handling systems require order of magnitude less energy than conventional terminals**
 - **Regeneration and sharing of power**
 - **Pooling of equipment**
 - **High opportunity for dual cycling = less motion (\$)** per box handled

What are the drivers for automation of container terminals on the projects being designed today?

- **Safety and health**
 - **A properly designed automated terminal is inherently safer, producing fewer injuries over its life**
 - **People are removed from the most dangerous areas / processes**
 - **Better and cleaner jobs provided to labor**