

## EQUIPMENT EFFICIENCY

For most turf production enterprises, operating mobile plant and delivery trucks are the biggest energy costs to the business. Emerging technologies are providing good energy savings therefore they should be reviewed regularly. Clear expectations of good truck efficiency should also be standard.

### Mobile Plant

- 1. Optimise plant size and type for all applications (load capacity, fuel type, comfort level, operator safety, etc)
- 2. Ensure hydraulics are correctly designed and sized for the application
- 3. Maintain hydraulics to the standard supplied (do not replace hoses with undersized hose)
- 4. Choose optimum engine standards (eg. Euro IV) for fuel economy and emissions
- 5. Think about fuel types for the task (hybrid, natural gas, LPG, assisted diesel)
- 6. Train the operators and keep refreshing the training for improved economy and vehicle life
- 7. Make use of GPS and mobile technology reporting, controls and remote reporting where you can
- 8. Optimise tyre type and maintenance (pressure, nitrogen filled, etc)
- 9. Regularly review new emerging technologies because these are changing quickly

### Lubrication

- 1. Implement a maintenance program using the appropriate lubricants
- 2. Chose lubricants for life, friction, reduction and environmental disposal
- 3. When choosing equipment ask about built in maintenance and lubrication systems

### Delivery Trucks

- 1. Include contractors paying for their own fuel in contracts to encourage economical fuel use
- 2. Ensure appropriate size and type of vehicle for the application
- 3. Select optimum engine standards (eg Euro IV) for fuel economy and emissions
- 4. Optimise tyre type and maintenance for grip, noise, energy use, durability, etc
- 5. Monitor with GPS to establish efficient routes and loads
- 6. Train operators for improved economy, safety and driver fatigue
- 7. Think about fuel types for the task (hybrid, natural gas, LPG, assisted diesel)
- 8. Consider battery powered air conditioning for vehicles that people occupy while the vehicle is idle so the engine can be turned off
- 9. Regularly review energy saving opportunities because there are many

### Hydraulics

- 1. Choose correct component sizing, cylinders, pumps, motors, pipe, hoses
- 2. Use variable speed drive motors were appropriate
- 3. Check cooling for motors and pumps is adequate