

## SUSTAINABILITY at CORTES DE CIMA

### ENERGY CONSERVATION (EC), WASTE RECOVERY (WR) and REDUCTION of GHG EMISSIONS (RE)

#### WINERY

##### **1. Solar Energy- (EC)**

Cortes de Cima is the first Portuguese winery with a Solar Photovoltaic Power Plant.

Since 2009 we have gradually invested in solar energy, and now with 150 kW installed, can cover 75% of our winery's total energy needs.

##### **2. Solar Panels (EC)**

In addition, 58 Solar Panels cover the roof of our winery, generating 45 kW to supply all our winery's hot water needs.

##### **3. Olive pit-fired Boiler (EC)**

To cover our winery's heating needs, the Solar Panels are supplemented by a Boiler fueled by olive pits (a waste product from olive oil manufacture).

##### **4. Extra Insulation to save energy (EC)**

We have heavily insulated our pipes, tanks, walls and roofs in the winery, to reduce the heavy energy costs of both heating in the winter and cooling in the summer. A simple, but effective measure, not standard in many wineries.

##### **5. Natural and low-energy lighting (EC)**

To reduce energy consumption in the winery and offices, we take advantage where possible of natural lighting, and have installed energy-saving LED lights.

##### **6. Natural air cooling (EC)**

During warm seasons, we make use of the fluctuation between cool night and warm day temperatures, by ducting natural drafts to cool down the buildings during the night, which have heated up during the warm daytime hours. This replaces artificial air-conditioning.

## **7. Introducing energy-saving new Technology in the winemaking process (EC)**

In the winery we are constantly experimenting with new energy saving technologies in winemaking, i.e. in areas such as stabilization, one of the highest energy consumers in a winery.

## **8. Reducing energy usage (EC)**

We have equipped all of our large electric motors both in the winery and in the vineyards with electronic speed variators, with considerable savings in energy as a result.

## **9. Reducing water and chemicals used in Cleaning in the Winery (EC)**

**(RE)**

In the winery, we have introduced high-pressure cleaning for tanks, etc., resulting in a great reduction to the water and chemicals used in the cleaning process.

## **10. Complete Recovery of Winery Wastewater (WR)**

A pioneer system for Portugal since 2008.

All our winery wastewater is led out to natural wetlands consisting of reed beds, where the wastewater is naturally and completely consumed by the reeds. These reeds are afterwards harvested for compost, which is then recycled back to the vineyard.

This is a completely natural method of sewage purification, with very low energy costs, in contrast to alternative wastewater disposal systems common in the wine industry in Portugal and worldwide, which can be very energy consuming.

## **11. Recycling grape stems from the winery back to the vineyard (WR)**

At harvest, the grapes are de-stemmed in the winery, and these stems are recycled back to the vineyards for mulch, reducing the need for applying other fertilizers.

## **12. Recycling all packaging waste from the winery (WR)**

All cardboard, glass, plastic and metal packaging waste from the winery are separated and sent for recycling.

### **13. Reducing GHG Emissions in Packaging Materials (RE)**

**Cork** - All our wines are estate bottled, with of course 100% Portuguese corks – a biodegradable, sustainable product! (i.e. *Not one cork tree is cut down to extract the cork, and the trees can go on living for hundreds of years.*)

**Glass Bottles** - We have switched most of our range to a lighter bottle weighing only 480 gr, compared to our earlier bottles weighing 550-610 gr. These bottles are also manufactured locally in Portugal, minimizing the carbon footprint of transporting empty bottles to the winery. All of the bottles are made with 70% or more recycled glass.

**Cartons** - Our cartons are made with 80% recycled paper. We do not use any Styrofoam in our packaging.

## **VINEYARDS, OLIVE GROVES, FIELDS**

### **1. Reforestation (RE)**

Since 1992, we have planted 90 hectares of mixed holm oak, cork oak and carob in the areas surrounding our vineyards, fields which were once used for growing arable crops. That translates into over 25% of our total property of 365 hectares converted to forest, or over 40.000 trees.

### **2. Integrated Protection - a step towards organic vineyards and olive groves (RE)**

Our vineyards and olive groves are accredited under a sustainable program called “Integrated Protection”. Under this program, we are required to only use ‘soft’ chemicals, and only when symptoms appear – preventive spraying is not permitted. This reduces both unnecessary chemical usage, but also tractor and diesel consumption in the vineyard. Our vineyards and olive trees are subject to spot checks for any non-compliance by independent monitors.

### **3. Raised trellis system reduces spraying in the vineyard (RE)**

Our raised trellis system, combined with the arid Portuguese climatic conditions, is also a great help in reducing spraying in the vineyard. The vine canopy is more open, exposing the grapes to more sun and air circulation, reducing fungus and mildew attacks naturally. We were pioneers in Portugal with this ‘new world’ trellis system.

### **4. Innovative sprayer to reduce chemical usage in the vineyard (RE)(WR)**

Our innovative sprayer uses the latest technology of 'drift recover' which captures and recycles the spray drift, resulting in a drastic reduction (up to 50%) of chemicals used during vineyard spraying.

#### **5. Inter-row cover crops (RE)**

We sow oats between our vines in the vineyard to create a cover crop. This inter-row cover crop enhances the health of the vineyard soil by adding valuable organic matter, and acts as a natural suppressor to weeds, without herbicides. By summertime the cover crop of oats is flattened with a roller to create a mulch layer, which protects the vine roots from excessive heat, greatly reducing evaporation and conserving soil moisture.

#### **6. Canes prunings as vineyard mulch (RE) (WR)**

The cane prunings lying on the vineyard ground are mulched (a mulcher hooked up to a tractor runs between the vines) and left to decompose. They are a valuable source of organic matter for fertilizer and improving soil structure. This is a much more environmentally friendly solution than the traditional practice of gathering them into heaps for burning in the field.

#### **5. Reducing Water use in the vineyard (RE) (EC)**

As global warming pushes temperatures up, water use is another important issue in the vineyard. For irrigation, we have created our own system of dams, streams and ponds, which are replenished during the rainy winter months.

Our vineyards are all irrigated following a system of 'regulated deficit' drip irrigation and for further water efficiency, we experiment with subterranean drip irrigation tubes.

#### **6. Our wetlands – wildlife and bird refuges (RE)**

Since 1988, we have built and numerous dams and ponds, planting large quantities of trees along these waterways. Today, these wetlands foster tremendous fish and wildlife, (otters, turtles, hares, foxes and wildboar) and birdlife (herons, egrets, mallards, storks, quails) not to mention our own vineyard geese.