Andrew Young
Vegetable Grower
Expert in Nothing
A long way from the sharpest tack in room
But I have seen some pretty dumb stuff from smart people
Redgold Pty Ltd

- Private diverters at Wemen, on the Victorian side of the Murray where it loops South Between Mildura and Robinvale
Redgold Pty Ltd  3rd generation vegetable growers

• We grow Lettuce and Baby leaf on forward programs with most of Australia’s fresh salad packing companies mostly in NSW and Victoria. They supply quick service restaurants and retail Chain stores
Mostly winter production
Harvest March until November

• We used about 1,200 megs per year
• Like all horticulture around here, our business is 100% dependent on reliable water supply
• Not many of our competitors in more coastal areas are as dependent on irrigation as us.
All of our produce goes out in bulk.
We do not retail pack anything.
Like most horticulture in this district we have been going very well over last few years

- We have a good team with us and we enjoy the dynamic nature of our work
- We like living on our great river in the Mallee
- Customers are keen for more
- Paying too much tax
Too comfortable

Life could be pretty comfortable if we were content to ignore the big issue facing the world.
# Redgold Emissions FY 2020

<table>
<thead>
<tr>
<th>Source</th>
<th>Item/Service</th>
<th>Activity</th>
<th>Unit</th>
<th>Greenhouse Impact (t CO2-e/yr)</th>
<th>Percent of Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>Grid Electricity</td>
<td>443,522.3 kWh</td>
<td></td>
<td>496.7</td>
<td>17.7%</td>
</tr>
<tr>
<td>Equipment</td>
<td>Carbon Neutral Paper</td>
<td>138.0 kg</td>
<td></td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Employees</td>
<td>Employee Commute</td>
<td>178,048.0 passengerkm</td>
<td></td>
<td>49.4</td>
<td>1.8%</td>
</tr>
<tr>
<td>Transport Fuels</td>
<td>Post 2004 Gasoline</td>
<td>500.0 L</td>
<td></td>
<td>1.2</td>
<td>0.04%</td>
</tr>
<tr>
<td>Transport Fuels</td>
<td>Post 2004 Diesel oil</td>
<td>2,400.0 L</td>
<td></td>
<td>6.9</td>
<td>0.2%</td>
</tr>
<tr>
<td>Transport Fuels</td>
<td>Post 2004 LPG</td>
<td>1,800.0 L</td>
<td></td>
<td>3.0</td>
<td>0.1%</td>
</tr>
<tr>
<td>Stationary Fuels</td>
<td>Diesel oil</td>
<td>126,173.0 L</td>
<td></td>
<td>359.4</td>
<td>12.8%</td>
</tr>
<tr>
<td>Stationary Fuels</td>
<td>Cylindrical Gas (15°C, 1 atm)</td>
<td>28.6 m3</td>
<td></td>
<td>0.1</td>
<td>0.002%</td>
</tr>
<tr>
<td>Third Party Services</td>
<td>Freight</td>
<td>2,742,198.2 t.km</td>
<td></td>
<td>189.2</td>
<td>6.8%</td>
</tr>
<tr>
<td>Synthetic Gases</td>
<td>Refrigerant</td>
<td>61.4 kg of Refrigerant</td>
<td></td>
<td>140.4</td>
<td>5.0%</td>
</tr>
<tr>
<td>Waste</td>
<td>Waste-landfill</td>
<td>27.6 t</td>
<td></td>
<td>33.1</td>
<td>1.2%</td>
</tr>
<tr>
<td>Waste</td>
<td>Waste -incineration</td>
<td>20.8 t</td>
<td></td>
<td>18.3</td>
<td>0.7%</td>
</tr>
</tbody>
</table>
## Redgold Emissions FY 2020

<table>
<thead>
<tr>
<th>Category</th>
<th>Material</th>
<th>Quantity</th>
<th>CO2-e (t)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>Waste-landfill</td>
<td>27.6 t</td>
<td>33.1</td>
<td>1.2%</td>
</tr>
<tr>
<td>Waste</td>
<td>Waste-incineration</td>
<td>20.8 t</td>
<td>18.3</td>
<td>0.7%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Manure</td>
<td>3,070.6 t</td>
<td>19.0</td>
<td>0.7%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Sulphate of Ammonia</td>
<td>36.7 t</td>
<td>35.0</td>
<td>1.3%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Calcium Nitrate</td>
<td>16,500.0 L</td>
<td>137.4</td>
<td>4.9%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>YaraMila</td>
<td>30.6 t</td>
<td>135.3</td>
<td>4.8%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Nitrophoska</td>
<td>28.6 t</td>
<td>128.8</td>
<td>4.6%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Ammonium Poly Phosphate</td>
<td>14,300.0 L</td>
<td>26.0</td>
<td>0.9%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Urea</td>
<td>23.0 t</td>
<td>34.5</td>
<td>1.2%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Chemicals</td>
<td>247,310.7 $</td>
<td>136.5</td>
<td>4.9%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Sorghum Seed</td>
<td>18,562.5 $</td>
<td>18.5</td>
<td>0.7%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Spinach Seeds</td>
<td>566,444.8 $</td>
<td>565.2</td>
<td>20.2%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Lettuce Seed</td>
<td>266,629.9 $</td>
<td>266.0</td>
<td>9.5%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>Triticale Seed</td>
<td>1,200.0 $</td>
<td>1.2</td>
<td>0.04%</td>
</tr>
<tr>
<td><strong>TOTAL (tCO2-e)</strong></td>
<td></td>
<td></td>
<td>2,801.3</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
# Redgold Emissions FY 2020

## Pie Chart

- **Raw Materials**: 53%
- **Utilities**: 18%
- **Third Party Services**: 7%
- **Stationary Fuels**: 13%
- **Synthetic Gases**: 5%
- **Waste**: 2%
- **Transport Fuels**: 0%
- **Employees**: 0%

## Table: Sum of Greenhouse Impact (t CO2-e/yr)

<table>
<thead>
<tr>
<th>Row Labels</th>
<th>Sum of Greenhouse Impact (t CO2-e/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Materials</td>
<td>1503.529779</td>
</tr>
<tr>
<td>Utilities</td>
<td>496.7450018</td>
</tr>
<tr>
<td>Stationary Fuels</td>
<td>359.4801176</td>
</tr>
<tr>
<td>Third Party Services</td>
<td>189.2116758</td>
</tr>
<tr>
<td>Synthetic Gases</td>
<td>140.4384</td>
</tr>
<tr>
<td>Waste</td>
<td>51.387648</td>
</tr>
<tr>
<td>Employees</td>
<td>49.3679842</td>
</tr>
<tr>
<td>Transport Fuels</td>
<td>11.1252324</td>
</tr>
<tr>
<td>Equipment</td>
<td>0</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>2801.285839</strong></td>
</tr>
</tbody>
</table>
Freight (19/20 FY)

359.4 tCO2-e/yr
Seed (19/20 FY)

850.9 tCO2-e/yr
Electricity 496.7 tCO2-e/yr (19/20 FY)
Diesel (19/20 FY) 370.6 tCO2-e/yr
The Mallee has a front row seat for climate change.

We have always been Semi Arid.

It isn’t a big step to becoming Arid.
Nobody quiet knows how close to the edge we are
Temperature graph

Ride the... GLOBAL TEMPERATURE ANOMALY

PRESENT DAY
DIFFERENCE FROM HISTORIC AVERAGE (°C)

10,000 Y.A.
6,000 Y.A.
2,000 Y.A.
Natural variability can explain much of the temperature variation since the end of the last ice age, resulting from factors such as changes in the tilt of the Earth's axis.
Global temperature anomalies over the past 11,300 years compared to historic average (1961-1990).

Temperature has always risen and fallen, never at this pace.
GDP per capita in England
Adjusted for inflation and measured in British Pounds in 2013 prices

Note: Data refers to England until 1700 and the UK from then onwards.
Basin Catchment

Surface water could decline 11% by 2030 under the median climate scenario (MDBSY).

1°C increase by 2030 could lead to annual runoff decrease between −2 and −22% in the southern Basin, −29 and +12% in the northern Basin (CSIRO, SEACI).
Work under the Climate Change in Australia initiative indicates the Australian climate will experience longer dry periods and more severe droughts (comprising more frequent and intense heat waves) in the future.
I can understand why some people ‘switch off’

• I have a yearning to say it could be just a beat up, I wonder if I am not just reading all the bad stuff and being led astray
When we look at the facts and evaluate the upside and downside risks there is no getting out of the fact, we need to change at Emergency pace.
If we get this Wrong

• Human extinction is not ridiculous
Whatever it takes

GDP per capita in England
Adjusted for inflation and measured in British Pounds in 2013 prices

Note: Data refers to England until 1700 and the UK from then onwards.

OurWorldInData.org/economic-growth • CC BY
Germany is currently confronted by the big question of putting principles in front of economic growth with regards to Russian Gas. A sudden shut off gas could cost them 12% of GDP!!

There are no winners without drastic climate action.
Climate Courage Required

- This is not simple
- Not pleasant
- Not Going away.
Within our social groups, our view of the world is greatly influenced by our peers.
If it is such a big deal then why are the polies playing games.

- We could say that well meaning people have been trying to protect us, but I tend to think they are just following the votes.
- It is a political reality that there have been votes in denial.
We are out of step with broader community.

- Need for social license
  - Only 29% of people live rural and regional. Most of them are not directly involved in farming.
  - Only 2.5% work in Ag

- At risk of developing into Polarized groups

- There is lots of work to do: developing clear pathways toward net zero
Social License

• Social license, or social license to operate – is a term that has been in usage for almost 20 years.

• At its simplest, it refers to the acceptance granted to a company or organization by the community.
Land Use Competition

- Rare earths and other minerals used in electrification of nearly everything
- Reforestation and Carbon sequestration
- Varying crops like Hemp to replace building products
- Biofuel
- Solar farms
- Transmission lines
Big changes in the way we work and live.

- Water security
- Changing climate
  - Varying competitive positions for produce.
  - Higher storm risk
- Tighter Regulatory control
- Changing relative input costs
- As carbon pricing directly or indirectly works its way into all aspects of our lives.
  - The more directly the better it will be much more accurate.

Huge opportunities for food and fibre production
We need engagement..

- It has never been more important than now for the farming and rural communities to engage in climate action planning.
- We need engagement at farm level.
- The input from people at the coal face with boots on the ground will be critical. There is huge global and national momentum to tackle this problem, action is guaranteed to accelerate.
Climb aboard the steam roller or go under it.
Thanks for listening. I appreciate it, not the most fun topic.

• Questions?