

## PLASTIC RECYCLING IN GENERAL (Why you shouldn't do it)

If this the business you like to jump in, here few things to get you started.

First, and we'll never be tired to say that, is plastic recycling is not the easier job to do so you better think it over more than one time before starting.

The reason for this is pretty simple and easy to understand: the raw material isn't constant.

That's all it is ? Yes it is all, but you better pay a little more attention to this.

Of course your scraps supplier will swear to you material has been sorted and it only matter to remove a little dirt that stays on the surface.

It may be true he paid a lot of attention to do it right nevertheless, by the case, a tiny piece of cotton fall into scraps and nobody noticed it.

Well this will cost you lots of money for screens to remove it from the melt and a lot of work for the person responsible of pelletizing and, at the end, material has turned brown and it is not good anyway.

Still interested in plastic recycling ? Keep going.

You found out there is a lot of agricultural film around and, better, you get even paid to get the black one, very elastic, shining, just beautiful.

After a more accurate analysis you find quite many stones and hearth together with film and, because you're getting money by the weight, no big deal.

At this point you start with the very first trial; a very nice shredder for cutting that delivers uneven chunks of film (do not even think to a granulator at this stage) and, to separate stones you put the film into water and, what ? it sinks ? Polyethylene is not supposed to sink !

Yes it does sink for quite many reasons:

First because this film has a good 3, if not 4% carbon black and if the word "carbon" tells you something, you start understanding what's going on.

Second because the very little amount of sand and hearth that stays on the surface has a specific weight ten times higher than plastic and, at this point you got the picture in full.

Well, not all scraps are like this !

Yes, you're right, there is worse

In nowadays there is quite a lot of mix plastics coming from households for which, once again, you'll get paid for and, guess why !

All this is to tell you to take a very careful approach to plastic recycling because all problems have a solution but first you have to know ALL of them and then find the shortest way to solve the problems because all solutions have a cost.

If you're still reading this it means you're really interested in this business so let's go to the good part of it, because there is also a good part, believe it or not.

Now, a lot depends where you are located because what's good for a system in Finland can be just stupid in Zaire, and vice versa.

When people ask for the quote of a system, in most cases everybody says "I would like to recycle (for example) PET bottles" at a rate of..... Kg/hour (sometimes not even that).

Offering a very sophisticated NIR sorting system, that easily cost 300.000 Euro, in Finland for a throughput of 3 Tons/hour is surely the way to go but, could you imagine if the same offer goes to Zambia for a system to handle 300 Kg/hour ?

(please, don't give me wrong, I like Zambia very much, actually much better than Finland)

This only to tell you the right approach should be to know exactly which kind of plastic scraps you're going to have, the type and quantity of contamination, the throughput of the line, the quality of the final product (this should be very detailed) and then, as side information, how much people, energy, water and space cost where the system will be installed.

Otherwise any offer you receive is just waste of time for you and the supplier as well.

Let's make an example of a little thing to better explain details have a lot of importance.

Always talking about a PET bottles washing line, if in your country rains 350 days per year the most sophisticated, well working air labels separator will not work, simply because material should be perfectly dry and, if it is not, the separator jams in no time.

If you are in Japan or China instead, because the way to remove PVC and PS labels is by air, doesn't matter how much it rains, material should be dried first and then go to separator(s).

So, having all the data is the very first step to get the right set up, where right stays for a plastic recycling system that performs well at the lowest possible cost.

Because you may like to make some money out of this. Isn't it ?

Next step therefore is something to help you to choose the right set up.

First, a system that does everything at no cost doesn't exist. Period

Second, each machine of the line should have a specific duty (a reason to be there)

These two things may sound obvious to you but they aren't for many people.

Because plastic recycling is a difficult job by itself, try to come up with something easy to operate, where you can see material all the time and with all machinery sized to handle peaks and not the average production.

This is also something a lot of people doesn't pay a lot of attention to:

If average contamination is, let's say 5% of "A" , 3% of "B" and 7% of "C" this doesn't automatically means your system should be sized to handle this % of contamination.

What happens if, for one hour time your system receives 15 % of "A" and nothing else ?

Can you system handle all of it or 15% of one contaminants is too much for it ?

Again, a plastic recycling system should be prepared for the worse, and sometimes even the very best set up gets in trouble.

If your raw material is constant, meaning you get it from a fix source, there will be no surprises and everything will run fine but if you get scraps from the free market, you better be prepared to handle what you didn't expect to handle and, think to the worse.